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TREATMENT OF THE INTESTINAL FISTULAS BY THE ELASTIC LIGATURE.*

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I wish in this paper to discuss the treatment of the severer grades of false anus and intestinal fistula. That many cases of fistula will close spontaneously, or with comparatively slight operations, is known to every surgeon, but there are others frequently met with in which the repair of the injured bowel can be accomplished only by methods which are the most difficult and dangerous of all surgery. To meet these cases successfully, we must have a clear understanding of the pathological conditions with which they are associated.

Destructive ulcerations or gangrenous inflammations of the bowel arise from many causes; the most common are obstructions, from constrictions, volvulus or other causes, suppurative appendicitis, tubercular deposits, typhoid ulcerations and injuries of the abdomen. Whatever the primary cause, the resultant pathological conditions, due to the

severe inflammations that accompany all insults to the peritoneal cavity of a septic nature, are similar, and, indeed, if we except the tubercular cases, nearly identical. Septic infection, which appears early in all cases, is the determining factor. It follows, of necessity, upon the constriction, suppuration or ulceration which has destroyed a portion of the bowel. The greater or less severity of this infection will depend upon the defences which retard or hinder its spread on the peritoneum. Thus, the gangrene due to an incarcerated hernia will cause less damage than one caused by an internal constriction—the march of the infection being retarded by the constriction, which shuts the affected coil off from the abdominal cavity.

So, too, the ulceration and abscess due to appendicitis may be walled in by a barrier of organized lymph, or on the other hand, that failing to take place, may from the very beginning infect the whole peritoneal cavity.

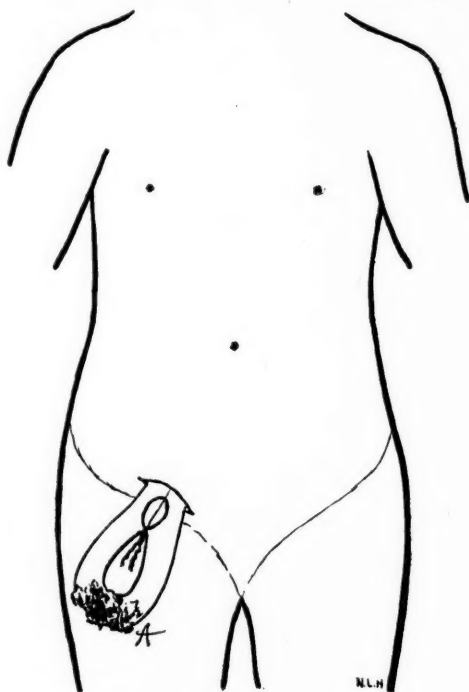
As a rule, those cases which from the beginning are accompanied by a general

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infection, die early, and only those survive for further surgery in which the general infection has been delayed or altogether prevented. Even when the diseased coil has been walled in and separated from the general peritoneal cavity, there is a certain slow process of infection which creeps up the coil and causes inflammation of the gut above. This is due, in part, to the interference in the circulation of the blood in the affected area and partly to the spread of the disease by the continuity of structure. The wall of new structure may protect the peritoneal surface but can not prevent the spread of infection on the mucous surface or in the tissues which lie between the serous and mucous coats. For this reason, we find that in gangrenous hernias, in which the strangulating bowel has practically closed all connection between the peritoneums of the incarcerated coil and that of the gut above, the bowel within the abdomen, is much congested and often mottled in appearance. Many times, indeed, there are dark spots on its surface which indicate a possible circumscribed gangrene. This condition may exist for a considerable distance from the point of constriction, and the surgeon is often in doubt about the future of such cases.

Where the gut affected lies within the abdominal cavity, and the process is acute, we find, in the earliest stage, a congestion of the bowel with the exudation from its blood vessels of more or less serum. Especially in cases of obstruction will this congestion spread rapidly over all of the adjacent viscera. In typhoid and other ulcerative processes it may not become apparent until perforation has taken place. As soon as this occurs, or when in obstruction the disease reaches the stage of

beginning gangrene, the progress of the septic inflammation is marked by a frightful velocity, and if not relieved at once ends usually in a few hours in death.



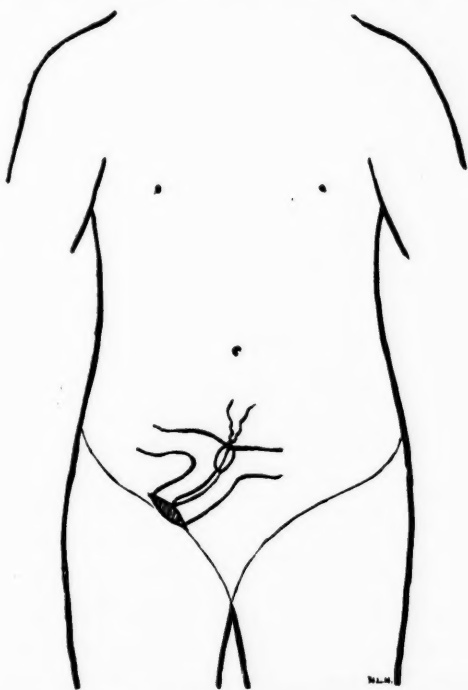
No. 1 Gangrenous Hernia.
A, portion that has sloughed.

When these cases are operated on early and the patient recovers from his condition of imminent danger, there remains a false anus of formidable character, through which there is a constant discharge of bowel contents. The gut, where it passes through the abdominal wall, becomes adherent and the abdomen closed. Within the abdomen the inflammation gradually subsides and disappears or, as not infrequently happens, assumes a chronic character. In either case, extensive adhesions occur, binding the viscera together and to the abdominal wall. The bowels become matted together and lose their freedom of motion and, in some cases, the efferent branch becomes obstructed or possibly obliterated at points below the fistula.

If the abdomen is opened for the purposes of repair, some months after the false anus has become established, the surgeon will be confronted with a mass of red intestines, whose peritoneal coat is hidden by granulations. The coils of bowel are widely adherent and very friable and efforts to detach them will frequently cause their rupture. At a later stage the redness may disappear, but the

limbs is a serious hindrance to end to end anastomosis.

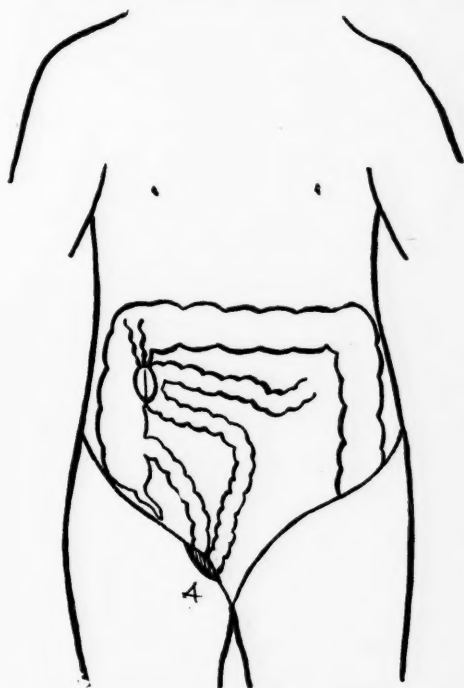
In this connection, it may be well to remark that the false anus, through which all of the bowel contents are discharged, has, in some respects, a widely different pathology from a fæcal fistula through which there is a leakage of only a small portion of those contents. In the latter case the passage of the fæces through the efferent branch serves to keep that portion of the bowel dilated, and thus prevents its contraction and atrophy. The two limbs of the bowel, being of nearly the same diameter, can be easily operated on by an end to end anastomosis, if resection should seem advisable. In the former case, the difference in the calibre of the two bowel sections and the uncertainty as to the patulous condition of the efferent



No. 2 The anastomosis made and the gangrenous portion of intestine removed. The ends are fastened in the wound.

adhesions become more firm, until finally the bowel walls become so blended together that it becomes impossible to distinguish one from the other or to separate them.

The friability of the gut wall will persist, even then, in the immediate neighborhood of the fistula. As time goes on the afferent limb of the bowel will retain its normal calibre but the efferent limb, from disuse, will become smaller in size and will undergo an atrophy of its walls. This difference in calibre between the two



No. 3 Shows anastomosis between ileum and colon. The fistula is at A.

portion, materially complicates the situation. It is not altogether uncommon in these disastrous inflammations to find more than one point of obstruction. It

would be evidently useless to unite the two limbs of the intestine if the distal limb were obstructed lower down by bands of organized lymph or by flexions.

Success in relieving these conditions must come, if at all, by a careful study of the obstacles which we have to contend with in each individual case. Let us see what these obstacles are and consider how we may overcome them by the most rational method. I will discuss, first, the simplest form, in which we meet with intestinal gangrene, that presented by the strangulated hernia. We have here an intestine which has been killed by a constriction which has occluded the blood vessels while, at the same time, it has prevented the passage of the contents of the affected coil, or of its surrounding sac, into the peritoneal cavity. It is simpler than an internal obstruction, because the worst products of the disease are confined outside of the abdomen. In such cases, if operative measures are postponed until gangrene has taken place, we will have almost always a patient who is nearly moribund from pain, shock and septic absorption. This condition, however, marks all cases in which extensive destruction of an intestine has occurred, from whatever cause.

It is a condition which warns the surgeon that he should do what is absolutely necessary, in as short a time and with as little violence as possible. When the hernial sac is opened and the fluids contained are evacuated, the bowel is found to be swollen and black. It may be so soft and disorganized as to rupture on slight traction. When the constricting band has been cut and the bowel drawn out of the abdominal cavity, that portion which has lain within the cavity will be found to be more or less mottled and discolored. In

very bad cases there may be on its surface black spots indicating an approaching gangrene. This discoloration may be limited to a few inches or may extend a foot or more up the intestine. When operating on such cases, the surgeon after opening the sac should disinfect, as thoroughly as possible, all of the diseased area before cutting the constricting tissues. After the stenosis has been relieved and the bowel drawn out, the very serious question arises as to the disposal of the gangrenous coil. The surgeon in deciding this, has to consider the general condition of the patient and the local condition of the gut. As the general condition is almost always very grave, the measures adopted should be such as take the least time and make the least demand on the patient's strength.

It is evident that a resection of the mortified bowel and end to end anastomosis, by any method whatever, although successfully practiced in a few cases, must, under these circumstances, be exceedingly hazardous. On the other hand, to content ourselves with the least dangerous method of treatment, that of fastening the bowel in the wound and permitting it to discharge through a false anus, is to look forward, in case of recovery, to still another dangerous operation for the relief of the injured bowel.

Some three years ago I proposed to obviate the necessity of a second operation by a simple method of procedure, to be carried out at once, before the bowel was fastened into the wound. It was simply to draw the bowel out of the wound until a portion was reached that was nearly normal in appearance, and then to make a lateral anastomosis between the two limbs with an elastic ligature. The idea was to provide a passage

for the contents of the bowel, and thus enable the false anus, no longer needed for the evacuation of the fæces, to heal. After the ligature had been applied, the bowel was to be disinfected and all that seemed in condition to recover pushed back into the peritoneal cavity. That part which was mortified, and that which appeared dangerously near mortification, was to be fastened outside of the abdomen, by stitching it to the abdominal wall. The immediate result of such a procedure, if the patient recovered, would be the relief of the distended bowel by means of the false anus and the gradual subsidence of internal congestion. When that had taken place and the ligature had cut through, it was hoped that the fistula would spontaneously heal or, should that fail to occur, could be made to heal by inverting the ends of the protruding bowel—a simple operation of little danger.

The only patient upon whom I have had an opportunity to try this method in recent hernia was too far gone to recover, and died a few hours after the operation.

This one is the only case, as far as I know, in which this operation has been done as a primary operation in hernia.

As a secondary operation it has been successfully performed by Dr. W. T. Henderson, of Mobile, Ala. Dr. Henderson's case, published in the *Mobile Medical and Surgical Journal*, November, 1903, was that of a negro, thirty-one years of age, upon whom he had operated for strangulated (right inguinal) hernia. On the ninth day after the operation, fourteen inches of the small intestine were discharged through the wound. At the expiration of the fifth week, the abdomen was opened at the outer border of the right rectus abdominal muscle and the

proximal limb of the ileum was united to the ascending colon by an elastic ligature. Up to this time no fæces had passed from the rectum since the hernia was operated on. On the fourth day after this second operation, fæcal matter began to pass from the rectum, and by a letter written about six weeks afterwards, I was informed that the false anus had very nearly closed, there remaining only a minute opening at its former seat.

As secondary operations for false anus, due to much more formidable internal constrictions and ulcerations, I have to report two cases, both due to the courtesy of Dr. J. B. Kennedy, of Detroit:

G—— G——, age 35 years, was admitted to Grace Hospital August 10, 1903. He had been ill during three weeks with typhoid fever and had had a severe diarrhœa during the last week, Aug. 6th.

On admission, his abdomen was found much distended and very tender. The pulse was 122; the temperature, by axilla, 97° F. Respiration 21. Surface of body cold and clammy; patient in collapse. Diagnosis was made of perforating typhoid ulcer. On August 11th the abdomen was opened in right iliac region. A large quantity of thin fæcal matter and pus escaped, and upon examination of the ileum, seven distinct perforations were discovered near the cæcum. No attempt was made to close the perforations but rubber drains were inserted and the abdominal wound left entirely open. He remained at the hospital until Oct. 5th, 1903, at which time all of the perforations had closed except one about the size of a silver quarter dollar, located about three inches from the cæcum. The patient, at this time, had gained much strength, but refused his consent to an

operation for the closure of the fistula. On October 5th he was removed to the Wayne County poor house.

It was not until January, 1904, that he consented to an operation for the closure of the false anus. On January 3d I found him much emaciated and very weak. There was a large opening in the right iliac region through which there was a constant discharge of fæces. I operated on him with the assistance of Dr. J. B. Kennedy, Dr. John J. Marker and Dr. James.

A longitudinal incision was made through the outer edge of the right rectus muscle. The intestines were found matted together and very red. The afferent limb of the ileum was located and drawn as far up as the strong adhesions would allow. It was united to the ascending colon with an elastic ligature after the usual method. This part of the operation was rendered very difficult by the immobility of the bowel and the necessity, caused thereby, of working below the abdominal surface. In passing the ligature, an accident occurred, which probably will never occur again, and which may have been responsible for the subsequent death of the patient.

I used the McLean needle, in which the rubber is secured by a ferrule, which passed over the needle and ligature. After the rubber cord had been tied, it was noticed that the ferrule had escaped from the needle and, on searching, it was found lying on the rubber cord, between the ileum and colon. After the needle had passed through the ileum, the ferrule, which was a little too large, had slipped up on to the rubber and had not followed the needle through the colon. The question now arose whether it were better to withdraw the ligature and insert a fresh

one or to surround the ferrule with Lembert stitches and leave it in situ. Fearing, in the friable condition of the bowel, lest I should rupture it by further manipulation, I decided upon closing it in and leaving it undisturbed, hoping that it would pass into the bowel and thus escape.

A rubber drain was inserted and the wound closed around it. On January 7th, the fourth day after the operation, fæces began to pass from the rectum and continued to do so until he died, on January 26th. A day or two later, a small amount of thin fæces was noticed discharging from the wound, and this, too, persisted at intervals during the rest of his life.

He eventually died of exhaustion, on January 26th, nineteen days after the operation.

In the postmortem examination, at which I was not present, the bowels were found inextricably matted together. The ferrule, with the attached rubber, was in the peritoneal cavity.

I think that this patient would have recovered, had it not been for the accident with the ferrule, which prevented the perfect union at the point of anastomosis, which is the normal result of the ligature operation. As it was, the fæcal discharge through the wound was slight, and that through the false anus had nearly altogether ceased before he succumbed.

From the fourth day after the operation he had regular fæcal discharges from the rectum.

The second case was, in many respects, peculiar:

J—S—, a Polish boy of fourteen years, was brought into the Solvay Hospital at Delray on January 31st, 1904, with symptoms of appendicitis. He had

had several previous attacks but none so severe as this one. He was operated on by Dr. J. B. Kennedy on February 2nd, who found the appendix immediately on opening the abdomen, and removed it. It was adherent to the neighboring structures but not suppurating. The wound was closed and healed, but the boy did not recover from his pain or bloating. This continued, with obstinate constipation, and finally faecal vomiting, until February 7th, when I was called to see him.

I found him in great pain and with abdomen enormously distended. His pulse was 130 but his temperature only one degree above normal. On Dr. Kennedy's invitation, I re-opened the wound for the purpose of examining into the condition of the bowel.

I had hardly opened the peritoneum when a great gush of faeces indicated a rupture of the bowel. On drawing the caecum and lower part of the ileum out of the abdomen, I found, two inches above the ileo caecal valve, a firm stricture of the ileum, which had nearly closed the gut. It was just above this that the rupture occurred when the adhesion gave way which bound the bowel to the abdominal wall. The gut above the stricture was enormously dilated and much discolored.

After evacuating the faeces and cleaning the abdomen, I connected the ileum at a point ten inches above the ileo-caecal valve with the ascending colon by a rubber ligature and fastened the ruptured end in the wound.

The boy at first did well and on February 11th, the fourth day after the operation, had a good faecal movement through the rectum. From this time until his death, Feb. 15th, the faeces ceased to pass

through the false anus and were discharged per rectum. He, however, continued to be bloated, to suffer pain and vomit, and finally died of exhaustion. At the autopsy there was found a perfect anastomosis, but in the ileum, twenty inches above the ileo-caecal valve and ten inches above the seat of anastomosis, there was found a constriction and above the constriction an opening through which faeces had recently been discharged. I was myself not present at the abduction but judge from the description obtained that the constriction at this point did not completely close the gut but produced, nevertheless, sufficient disturbance to cause thinning and rupture of the tissues above.

In severe inflammations of the bowels, with false anus, the possibility of stricture in the efferent portion of the bowel must always be inquired into before operating, as failure would be assured before hand if the afferent were united to the efferent branch at any point above such a constriction in the distal limb. In this case, death occurred from a partial stenosis and eventual perforation of the bowel, in the afferent limb, ten inches above the anastomosis. The question arises in such cases, whether one ought rather to accept the chance of the existence of such a condition, as I did, and close the operation as soon as possible, or, on the other hand, waste valuable time and strength while informing one's self of the state of the bowels above and below the point of operation.

The question whether a stricture exists in the efferent branch of a false anus should always be decided by injecting in it large quantities of colored water or other material, whose passage from the rectum would prove the patulous condi-

tion of the bowel. When the false anus involves the upper part of the small bowel, nutriment should be injected into the distal limb while preparing the patient for the operation.

The two cases which I have reported, though both fatal, one from a prevent-

able, the other from a non-preventable cause, were both successful in opening the passage between the afferent and efferent bowel, and in obviating the passage of fæces through the false anus. In both cases the false anus had begun to heal before death cut the matter short.

THE INFLUENCE OF BREAST FEEDING ON THE INFANT'S DEVELOPMENT.*

HENRY DWIGHT CHAPIN,
New York City.

Clinical results the world over have demonstrated that the milk of the healthy mother is the best food for the infant up to the normal time for weaning. It is the natural food for infants and this fact alone should cause us to believe that a superior or even an equally good food can not be produced artificially.

The milks of the lower animals contain the same food elements as breast milk, viz.: fats, proteids, carbohydrates, mineral matter and water, but in different proportions. Investigation has shown that the composition of milks of different species of animals is closely related to the rapidity with which the young grow, a milk high in proteid being intended for a quick growing animal, as might be expected. The milk of any species has uniform characteristics and is kept by nature within certain narrow limits of variation; this fact has been demonstrated by many experiments on cows. It occurred to some dairymen that feeding fat to cows might increase the amount of butter fat in the milk, and as high as two pounds of tallow a day were fed to

healthy cows, but the increase of fat in the milk was hardly perceptible. Attempts at feeding proteid into milk have not been successful and the most competent dairy students have come to the conclusion that it is beyond the power of man to alter the character or composition of cow's milk, except by disturbing the cow's nervous equilibrium or digestion, or by underfeeding. When normal feeding and nervous conditions are restored the milk resumes its normal character. This is exactly what we find in treating nursing mothers; if they are worn out and nervous we try to improve their general condition; we order easily digested food, look after the state of the bowels and have the mother sleep away from the child where she may rest and not be disturbed; if the mother is overeating we cut down her diet and order exercise to the point of fatigue to insure complete metabolism of the food. In a few words, we try to bring about a normal condition of the body and nature does the rest; we do not alter the composition of milk, increasing or decreasing one or all of the ingredients at will, as we sometimes think we do when we successfully treat a nursing

*Read by invitation before the Wayne County Medical Society, May 30, 1904.

mother, but bring about the secretion of the milk that is normal to that mother. What is normal for one woman may be abnormal for another, just as much as rich Jersey milk would be unnatural in a scrub cow of no dairy qualities; but leaving out extremes, the milk of any species has a fairly fixed type of composition which shows the nutritive requirements of the young of that species.

In artificial infant feeding little difficulty is experienced on the part of the infant in digesting and assimilating as much fat and carbohydrates as are found in breast milk, but great disturbance is often the result when as much proteid as is found in mother's milk is given. A favorite method of overcoming this disturbance has been to reduce the amount of proteid in the food to one-third to one-half of that in human milk. When it is remembered that the blood, brain, heart, liver, lungs, kidneys and muscles—in fact the working portions of the body—are built up from the proteid of the food, the tremendous advantage that the infant which is assimilating good breast milk has over the bottle fed baby, that may be assimilating not more than one-half as much vital-tissue building food (proteid) will be at once appreciated.

Poor nutrition paves the way for sickness. The breast fed infant is not as susceptible to disease as the artificially fed baby, and when attacked, recovers more promptly, as it has more vitality and reserve force. Condensed milk babies proverbially succumb to almost any serious illness, and when the small amount of proteid in highly diluted condensed milk is considered, it is surprising that any other result could be expected, as the infant has in this food little from which a strong vigorous body

can be constructed. Too much attention has been paid in the past to gain in weight and too little to the character of the flesh. Many experiments have shown that of two animals of the same weight one may be a little dwarf enclosed in a mass of dropsical, fatty tissue, while the other may be a giant in comparison, when the amount of blood, and size and strength of all the vital organs is determined in both. This difference is due to feeding too little proteid to the dwarfed animal.

From a nutritive standpoint alone the breast fed infant has a great advantage over the bottle baby, but it has other things greatly in its favor also; mother's milk is more than food, as we think of food for adults; it is a food that adapts itself to the infant's developing digestive tract. What form the mother's milk assumes after it reaches the stomach depends upon the state of development of the stomach; in the early stage of lactation, the secretion of the stomach is the rennet ferment which changes the casein of the milk into a soft, solid mass or curd which is not digestible by pepsin; the character of this mass or curd differs with the kind of milk. When the stomach secretes hydrochloric acid it combines with the curd and forms chloride of paracasein, a compound much denser than rennet curd or paracasein; this compound of curd and acid is readily digested by pepsin, and gastric digestion commences. As fast as the secretion of acid and pepsin increases in quantity and strength, the mother's milk is ready to use it up, and we find as the child grows older and its stomach increases in size and becomes stronger, that it takes longer for it to empty and that the feeding intervals must be made greater. At birth the stomach digests little of the food and secretes lit-

the digestive juice, but mother's milk does not change in composition as lactation advances, except towards the time for weaning, when it may become poorer in solids; it is one of the wonderful things of nature that the mother's milk does not change as the infant grows older; nature does not have the YOUNG follow the mother's milk but has the milk ever ready to fit the developing digestive apparatus. If the stomach is backward in secretion of acid and pepsin, the milk remains soft and ready for intestinal digestion. Nature intends that the infant at weaning shall have a well developed and vigorous digestive apparatus and provides in the casein of milk a food substance that will insure this development. The caseins of milks differ with the species, and knowing the function of the casein and that the digestive apparatus shows great differences in the various species of mammals, it would be unreasonable to think that the milk of one species would adapt itself to the digestive tract of another.

The differences in milks are not so much nutritive as physiological ones, and a little thought will bring this fact home to any one. In the reproductive process in the simpler forms of life, the young are offshoots from the parent's body, from which they gradually separate, and when detached have all the attributes of the parent; never in nature do we see parents leaving their young until the young are able to secure food for themselves; if the necessary food is not all derived from the parent's body, suitable food is provided until the young is able to look out for itself. The various mammals are PHYSICALLY separated from the mother's body at different stages of development: PHYSIOLOGICALLY

none are separated from her body until they are fully formed and able to eat the same kind of food as she eats; PHYSICAL separation takes place at birth; PHYSIOLOGICAL separation at weaning.

From a physiological standpoint, an artificially fed baby is a premature child and anything but maternal milk is foreign to its digestive tract; chemical analyses of foods will not show all their defects or advantages; these are often brought to light only by a study of physiology and pathology. The reason so much difficulty is had in feeding cow's milk to infants, is that digestion in the calf is different from infantile digestion; cow's milk is physiologically adapted to a calf's stomach, human milk to the infant's stomach.

With our present knowledge, the principles of infant feeding become very simple. The food should contain as much nutriment as breast milk; it should be as digestible, and it should adapt itself to the developing digestive tract. Milk of some kind must be the foundation of food that is to be the regular diet, as its casein is the only form of proteid that will change its character with the change of digestive secretions. As the stomachs of mammals differ, so their milk differ, and there can be no scientific infant feeding unless this fact is kept in mind.

When we go beyond the chemical composition of human milk and cow's milk and look at how they are affected by the digestive juices, we see at once that their differences are more than quantitative ones and the supposed difference in reaction. Adding alkalis to cow's milk does not change it into breast milk—neutralize the alkali and the properties of the cow's milk return—nor does adding acid to mother's milk make it resemble cow's

milk. We now know that adding lime water or other alkalis to cow's milk prevents the stomach secretions acting on the casein and forming compounds that require gastric digestion. Heating cow's milk also alters it so that it is less easily acted upon by the rennet ferment of the stomach and softer curds are thus formed. In all our attempts at making a substitute for maternal milk we have been groping along in the dark trying to explain our clinical observations by the supposed chemical differences of human and cow's milk. With the great flood of light that recent research on milk has turned on this subject, we are able to see how well established facts and observations have been misinterpreted. Hammersten, who did so much work on milk, really discovered what has recently led to clearing up many of the perplexing problems of milk chemistry, but the conceptions of the chemistry of proteids and acids in his time were such that he failed to recognize that he had made a great discovery. By an irony of fate it was left for two Americans (Van Slyke and Hart) thirty-seven years later, to solve the problem of what changes take place, and what compounds are formed when cow's milk is acted on by rennet, acid and pepsin. Many of their results had been obtained by Hammersten, but his theories made him believe that the observed facts had no significance; what is really an establishment of a knowledge of the processes of digestion of milk in young animals was thus made to wait many years.

The well nourished breast fed child has its food supplied in proper quantities, in forms which are assimilated to the best advantage, and that so adapt themselves to the growing digestive tract that full development is insured. The haphazard

fed bottle baby often receives food deficient in material from which healthy organs and tissues can be constructed; the form of the food when of sufficient nutritive value is often such that no functional development is produced, or such that it causes constant irritation and lays the foundation for chronic indigestion and malnutrition. The breast fed child begins life for itself well developed and fitted for the struggle for existence, while the artificially fed baby at the same age may be anæmic, dwarfed, and have its organs under sized and perverted in their functions. Careful feeding from the start may lessen the danger of such results but we must realize that it exists. We can not appreciate the influence that breast feeding has on the development and future of a child until we understand that many of the common disorders of bottle fed infants are the ultimate result of the lack of mother's milk. Human milk, like many other things, is not truly appreciated until it is missed. The place milk holds in the animal economy is well worth careful consideration; at this time it is only possible to touch on the subject, but in a series of articles published recently the writer attempted to show what an important part of the development of some animals takes place while at the mammary glands and how their secretion changes to meet new conditions in the young. The essential scope of these articles was to emphasize the biological aspect of infant feeding.

When the doctors, the nurses and the mothers come to realize that Nature did not intend a child to take anything but breast milk as food until its digestive tract was completely formed, and that maternal milk helps in the formation of a strong and vigorous stomach, there will

be less trouble with artificial feeding, as careful feeding will commence at once and the start will be made with a fairly well child and not with one that is suffering from a perversion of the digestive apparatus. The mothers will be taught

that a food that "agrees" is not necessarily the proper one for continued use and that the change to something else may have a useful purpose and that in the art of feeding there are other problems than mere gain in weight to be considered.

COW'S MILK FOR INFANT FEEDING.*

AUGUSTUS CAILLÉ

New York City.

The various problems in infant feeding are a perennial subject for discussion. The main difficulty lies in the dietetic management of bottle-fed children. Breast-fed children do not invariably thrive, but their management does not present the difficulties which we encounter in the other class of cases.

Our principal aim has been to take the composition of mother's milk as a standard, and to adjust cow's milk in accordance with this standard, cow's milk being the most available substitute for mother's milk which we have.

Modification of cow's milk is accomplished by reducing the proportion of proteids by dilution; by increasing the quantity of fat originally sufficient but made insufficient in amount by the necessary dilution; by increasing the sugar and salt made insufficient in amount by the necessary dilution.

The manipulations necessary to modify or adapt cow's milk for infants can be carried out in the household or in milk laboratories. The introduction of percentage feeding has placed infant dietetics on a scientific basis and has given us milk laboratories, but success in in-

fant feeding is not a matter of accurate percentages—as the general practitioner has erroneously inferred. Milk food ordered by prescription according to the percentage method and supplied by the laboratory has given me very excellent results, but I have obtained the same gratifying results by home modifications by simple dilutions, in which the principle of percentage feeding is carried out in a crude and simple way.

For various reasons modifications of cow's milk, whether done in the household or in the laboratory, will not give uniform good results in difficult feeding cases, no matter how accurate we are in our manipulation of percentages. The chemistry of digestion is very complex, and the alimentary canal is not a test tube. The behavior of food in an infected intestine, or feeble organism, is often difficult to understand, and thus our best efforts will have their limitations. Success in feeding will not come to us with mathematical certainty. Minute differences in the composition of the proteids of cow's milk as compared to human milk have a theoretical but no practical interest. Suggestions for modifying cow's milk which take into consideration the minute differences in chemical composi-

*Read by invitation before the Wayne County Medical Society, May 30, 1904.

tion, are thrown to the winds. We *cannot* convert cow's milk into mother's milk, no matter how scientific we are. We are obliged to use cow's milk as nature furnishes it and *without proper hygienic* management neither home nor laboratory modification of cow's milk will fit the baby with a capricious digestion. *With proper hygienic management*, however, clean cow's milk, properly diluted or modified, will fit the vast majority of infants.

In the home modification of cow's milk, the greatest simplicity is desirable for all concerned. Simple dilution of top milk with water or farinaceous water will answer in the vast majority of cases, if the deficiency of sugar and salt is made up by adding these substances to the diluted top milk.

The following simple method of home modification has been practiced by the writer for the past twenty years:

If a quart bottle of average good milk stands four hours, the upper half of the milk will contain about twice as much fat as the milk before standing. This PINT of so-called top milk is decanted and forms the basis of bottle food for home modification.

By diluting this top milk in various proportions, viz: 1-1 1-2 1-3 1-4 1-5, we obtain a food of various strengths as regards fat and proteids.

The deficiency of salt and sugar is readily made up by the addition of these substances and a food can thus be prepared which will vary in composition according to the requirements of the child to be fed. The cost of a daily feeding with the best milk obtainable is about twenty cents per day.

When clean milk can be had, the milk may be given raw. In hot weather and with the average milk supply the food must be sterilized.

SCHEDULE OF HOME MODIFICATION OF COW'S MILK.

	No. 1 (1-4)	No. 2 (1-3)	No. 3 (1-2)	No. 4 (1-1)
Cane Sugar	2 ounces	1½ ounces	1¼ ounces	1 ounce
Table Salt	35 grains	30 grains	25 grains	20 grains
Diluent	26 ounces	24 ounces	20 ounces	15 ounces
Top milk	6 ounces	8 ounces	10 ounces	15 ounces

No. 1—For young infants (1 month) and difficult feeding cases. Feed one to two ounces every two hours (twice at night).

No. 2.—Adapted for young infants with good digestion or for infants 2-3 months old. Feed 2-3 oz. every two hours (twice at night).

No. 3—Adapted for infants from 4 to 8 months. Feed 4 to 6 oz. every 2½ to 3 hours, 8 feedings in 24 hours (once at night).

After the 8th month give 6 bottles and two feedings of cornstarch pap with egg, or mutton or beef broth with rice or sago, tapioca, pea soup.

No. 4—Rich milk adapted for children over one year old. Give 5 bottles 6 to 8 oz. each, and two additional feedings as above.

Fill the mixture into small nursing bottles, each to contain one feeding, and cork with a pledget of clean cotton and sterilize in warm weather. Sterilized milk keeps without ice. Keep raw and pasteurized milk food on ice. Before feeding heat to body temperature by placing the bottle in hot water. Then remove cotton and feed by means of a rubber nipple.

This method of modifying cow's milk does away with the addition of separated cream and is a distinct advantage over the so-called cream mixture, because separated cream having a high market value, it is not invariably fresh, it has not a uniform composition and is very prone to spoil and give rise to dyspeptic diar-

rhoeas and symptoms of milk poisoning in general.

Cow's milk modified in the household according to this simple method will agree with the vast majority of infants. In a difficult feeding case it is best to stop feeding milk for a few days and begin again with a low strength modified milk and gradually work up. When we encounter a positive idiosyncrasy for cow's milk we may be compelled to make use of some other foods.

An idiosyncrasy for cow's milk in proper dilution should not be suspected *until after the children have had proper hygienic management to help them digest their milk.*

Infants and children who are kept in doors in cool and cold weather, and breathe the air of overheated and stuffy living apartments, will not digest well no matter what they feed on.

During the greater part of my active professional life, extending over 27 years, I have made it a practice to send infants out of doors from the time that they are six weeks old.

The insane fear of breathing cool fresh air is almost as pronounced to-day as it was in times before the advent of the germ theory of disease and is responsible for most of the indigestion among children. A move in the right direction as regards the hygienic management of infants and children has been started in Boston by some of the wealthy families in the Back Bay district, who put their babies to sleep in a box on the flat roof or on a balcony or window sill, summer and winter. The method is begun when the baby is two months old, and may be continued as long as the custom of having a daily nap is continued.

The baby is wrapped like an Indian papoose and strapped to the box or basket in such a way as to give freedom to feet and arms and yet make it impossible for the child to crawl out. The crib is shielded from the wind and direct sun rays by an awning overhead. If the outdoor treatment is carried out, drugs and digestive ferments and the peptonizing process, are hardly ever indicated.

To sum up I would say there are no universal rules for feeding cow's milk. What we must aim at is to individualize in each and every case, and not attempt to adopt one form of feeding to all cases and under all conditions. In order to make a success of infant feeding we must have some knowledge of the composition of food stuff and of its caloric value.

In a difficult feeding case cow's milk should be discontinued for a short time and cereal decoction and egg white, etc., substituted.

In resuming cow's milk we begin with a low strength and gradually work up to full strength milk and avoid overfeeding.

Digestion of cow's milk is best stimulated by carrying children out of doors, not by drugging.

Idiosyncrasy for cow's milk is managed by selecting some substitute food, if possible the breast of a wet nurse.

Cow's milk should be sterilized in warm weather. Infants will usually thrive on properly modified cow's milk up to 7 months. After the 7th or 8th month they are apt to become rachitic unless they receive beef or mutton broth, with cereals and egg in addition to cow's milk.

With proper hygienic management to stimulate the motor function of the gastro enteric tract, we may let the secretions take care of themselves.

MILK LABORATORIES.*

JOHN LOVETT MORSE,
Boston.

The first milk laboratory was established in Boston in 1891 by the Walker-Gordon Laboratory Company. Laboratories have since then been established in many other cities of the United States as well as in Canada and in London. The credit for the conception and development of the milk laboratory belongs entirely to Dr. T. M. Rotch of Boston. The laboratory of to-day is the result of his studies and untiring efforts for the advancement of the science of infant feeding. While Dr. Rotch has always been behind the laboratory medically and has done more than anyone else to develop the present system, it is only fair to say that he has not and never has had any financial interest in the Walker-Gordon Laboratory Company.

The object of the milk laboratory is twofold: First, to provide a clean, constant and reliable milk supply, and, second, to provide a place where combinations of milk may be accurately prepared under the best possible conditions according to physicians' prescriptions. The laboratory does not produce an "infants' food." Modified milk prepared at the laboratory, or as it is often called, "laboratory milk," should never be included in the same category as the various foods prepared by the manufacturing chemists. The laboratory merely fills physicians' prescriptions for modified milk. It sells no modifications without prescriptions. Its relation to the physician is the same as that of the pharmacy, neither more nor less. The laboratory has no theories as

to infant feeding. It has no opinions as to whether gravity cream or centrifugal cream is the better in the preparation of modified milk. It has no theories as to whether whey mixtures or cereal diluents should be used to diminish the size of the curds. It merely prepares any mixture designated by the physician. It will prepare it with gravity cream or centrifugal cream as he desires. It will give him a whey mixture or a mixture prepared with a cereal diluent as he orders. If required, it will even add one of the proprietary foods. It sends it out heated or unheated, as requested. This being the case, if modified milk prepared at the laboratory does not agree with the individual baby, the physician who ordered the milk should be blamed and not the laboratory.

The laboratory also sells milk and cream of definite fat percentages to be used in the home modification of milk.

The laboratory consists of two parts, the farm at which the milk is produced, and the laboratory proper in which the modifications are prepared. They are of essentially equal importance, the farm being, if anything, the more important of the two.

The farms are either owned or absolutely controlled by the Walker-Gordon Laboratory Company. Every effort is made, and, as a rule, made successfully, to produce a milk of constant composition, as free as possible from bacteria and suitable for infant feeding. In order to get a constant milk the cows are not put out to pasture but are fed entirely on special food, the rations being essentially the same throughout the year. They are not

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housed, however, except during inclement weather, being given exercise in paddocks. The breeds of cows are carefully chosen with reference to the suitability of their milk for infant feeding and also with regard to their natural disposition and digestion. Holsteins and Ayrshires have shown themselves most adaptable in these respects. They are, especially the Holsteins, of even temperament, of good digestion and not very liable to tuberculosis. Their milk contains a much larger proportion of stable fats and a much smaller proportion of the volatile glycerides than does that of Jerseys and Guernseys. An additional advantage in these breeds is that the fat corpuscles in the milk are much smaller than in that of Jerseys and that when the emulsion is broken down it is much more easily restored. The stables and other farm buildings at the farms owned by the Walker-Gordon Laboratory Company are built in accordance with the most modern theories; at the leased farms they are brought as near to them as is possible under the circumstances. The care of the cows and of the stables and the methods of obtaining and chilling the milk are the same in principle as those employed in all first-class dairies. They are, however, carried out more thoroughly and in greater detail than is usually the case. The success of these measures is shown by the low bacterial contents of the milk.

In the laboratory the various modifications of milk called for by the prescriptions are prepared under cleanly conditions by men trained for the purpose. Those who prepare the milk have nothing to do with the calculation of the proportions of the various ingredients to be used. They merely carry out the directions given them by the prescription clerks. These

clerks translate the directions of the physician into amounts of cream, milk, whey, barley water, and so on, as the case may be. The milk is then pasteurized or not, as ordered, and is ready for delivery. When the patient lives close by the milk is delivered in baskets. When it is to be carried or shipped to a distance it is packed in a special ice-box. When packed in this way milk can be sent considerable distances with a fair degree of safety, even in hot weather.

In ordering a modified milk from the laboratory, the physician does not have to calculate the amounts of cream, milk and other ingredients to be used in its preparation. He merely states the percentages of fat, sugar, proteids and lime water which he desires in the mixture, the number of feedings, the amount at each feeding, and if he wishes it heated, the temperature at which he wishes it done.

Milk laboratories have been subjected to much criticism, some of which has been just but most of which has been unjust. It has often been said that the price of laboratory milk is prohibitive except for the rich. Laboratory milk certainly is expensive, the average cost being about \$3.50 a week. This price does not seem at all exorbitant, however, when the expense of producing a pure milk, and of then modifying and delivering it, is taken into consideration. In order to put modified milk within the reach of those in very moderate circumstances, the laboratory has recently begun to sell unheated modified milk by the quart or pint at the rate of 20 cents a quart. This price is certainly not exorbitant or beyond the reach of anyone who has any right to have a baby.

It is self-evident, of course, that those who do not believe in modified milk for

infant feeding can have no use for the laboratory. This class is fortunately, however, gradually diminishing in number as the result of education and in response to the demands of a public which is rapidly increasing its knowledge of the proper methods of infant feeding. Much of the criticism has been from physicians who have failed to appreciate the purpose and the capabilities of the laboratory. They have apparently not understood that the laboratory does not produce any special food or that it requires any more intelligence to prescribe modified milk than it does to order people to use the various proprietary foods according to the directions on the can. They do not seem to have realized that the laboratory will put up anything which they order; that if, for example, they prefer a mixture prepared with gravity cream, the laboratory will prepare it with gravity cream, or that if they prefer mixtures prepared with cereal diluents, that the laboratory will put in cereal diluents. A certain number of physicians seem to have found the laboratory a convenient scapegoat for the failure of certain babies fed on laboratory milk prepared according to their own directions to do well. It has been much easier and more conducive to their self-respect to attribute the failures to the laboratory rather than to their own imperfect methods of prescribing, and to forget that the laboratory has merely done what they have ordered it to do. The laity is even more prone than the profession to take the laboratory as a scapegoat. They are inclined to exaggerate every mistake made by the laboratory and to minimize their own. It seems to me that as a class they have been decidedly unreasonable. They, as well as

many physicians, have demanded of the laboratory a perfection which they have not required or expected of themselves or others, and have not been willing to make due allowance for the mistakes made by the laboratory—for there can be no doubt that mistakes have been made and will continue to be made at the milk laboratory. Most of these mistakes are, moreover, avoidable, and due to carelessness of some sort or other. Mistakes are made in every business, however, no matter how much care is taken to prevent them. A certain number must be expected and due allowance made for them. I feel sure that the management of the laboratory intends to have the milk properly and carefully prepared and delivered, and that it makes every effort to attain this end. Unfortunately their employees are human and consequently, like other men, occasionally make mistakes. The milk laboratory and the percentage system of feeding should not, however, be condemned on this account. An occasional slip, even if avoidable, does not invalidate the system or destroy the value of the milk laboratory. If, instead of totally condemning the laboratory and withdrawing their support when mistakes are made, the physicians and the public would exercise a certain amount of charity and kindly but firmly call the attention of the management of the laboratory to them, a long step would be taken toward preventing their recurrence. It rests with the public, and especially with the physicians, to determine whether the milk laboratory is to be a success or not. If they give it proper support, encouragement and criticism, it will give them the service which they demand, otherwise it cannot.

SUBSTITUTE FEEDING DURING THE FIRST YEAR.*

THOMAS MORGAN ROTCH,
Boston.

It is difficult in a few words to give the true meaning and significance of substitute feeding. I shall therefore only attempt to state shortly some of the essential principles connected with it.

(1) In the first place we should remember that the question of substitute feeding is not one of choice but of necessity, that it represents in the great mass of cases failures of breast feeding, and therefore must really be considered as a life saving measure and one that is often forced upon us.

(2) In taking good human milk, as I think we may, as a standard we must admit that this standard food varies considerably in the percentage of its various elements. This impresses upon us that a system of substitute feeding should represent the possibility of variations and this results in the fact that all rational substitute feeding is practically a modification of some animal milk.

(3) That modifying a milk, and to avoid discussion we will take it for granted it is cow's milk that we are speaking of, simply means changing the percentages of its constituents or any combination of such percentages.

(4) From a pretty wide experience of many physicians who have made a special study of the infants' digestion, we are impressed with the belief that infants have varying digestive idiosyncrasies and that they therefore are not to be fed by routine methods or by rule of thumb but with reference to their individual diges-

tive capabilities, although of course general rules can be deduced from a large number of average cases. In this connection, also, it is to be noted that it is the experience of many who have made a careful study of changing the percentages of the different elements of the food that in certain cases often slight changes are productive of good or bad results.

(5) That in substitute feeding we have two questions to deal with; first, digestion; second, nutrition, and that it is wiser to deal first with the digestion and then gradually lead up to a food by which the nutrition is improved, and, in fact, to make these two factors of the problem correspond to each other as nearly as is possible in the individual case.

(6) That in substitute feeding it is the milk supply and the materials which we can obtain from it that must primarily be looked to for a successful substitute feeding. We must have a milk supply which is clean and bacteriologically safe, this latter not meaning that it should be absolutely sterile. Having obtained such a supply, the proper adaptation of the various percentages and combination of such percentages, from this pure, original milk, is of great use in preparing a substitute food, especially in the early months of life.

(7) There are of course many formulæ and many ways of obtaining desired percentages, but all must rest on the same basis, each physician adopting the one which seems the simplest and clearest to him. We must however, primarily remember that a variation of per-

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centages is most easily obtained by using for materials creams of different fat percentages, fat free milk, milk sugar and some substance to regulate the alkalinity, such as the addition of lime water. In this connection we should recognize the significance of using creams of known and varied percentages of fat. This is a necessity for the reason that with certain creams certain percentage combinations of the proteids cannot be obtained and we must therefore know with what creams we can obtain the percentage of fat or proteids indicated for the especial infant; for instance, the least total proteid that can be obtained from a 10 per cent cream when a 4 per cent fat is needed in a substitute feeding, is 1.34. In many instances this proteid would be too high for the proteid digestion of an individual case in which the proteid digestion is weak. In this case a cream of higher fat percentage, such as 16 per cent, is called for, as with a 16 per cent cream a proteid as low as 0.80 can be obtained. There are numerous instances illustrating this rule which could well be spoken of if time permitted. We should understand, however, that these are simple facts which are deduced from experience in feeding and that there is not much doubt that some infants have a weak fat digestion, others a weak sugar digestion, and others a weak proteid digestion, and that the individual infant thrives on various percentages of either fat, sugar or proteid, provided that the especial element in which its digestion is weak is of a low enough percentage to be within the limits of its individual digestion, while the other elements have a high enough percentage for nutrition. In carrying out these principles still further in connection with the proteids it should be understood that in

young babies in the early months and also at any age, where they are sick or where their proteid digestion is especially weak, that a difficult proteid digestion can be greatly aided by using what may be called the split proteids, that is certain percentages of whey proteids in combination with certain percentages of caseinogen. Table A is explanatory of what I mean in this connection.

TABLE A.

Prescriptions for modified milk may call for percentages of fats, sugar and proteids, in variations of 0.25 per cent. Any percentage of fats from 0.00 to 4.00 may be obtained in combination with any percentage of sugar from 4.00 to 7.00, and with any percentage of proteids from 0.25 to 3.50.

$$\frac{14 \times 1}{20} = 0.70$$

WHEY CREAM MIXTURES.

Any percentages of fats and sugar as given above may be obtained with the following combinations of whey proteids and caseinogen:

Whey proteids. Per cent.	Caseinogen. Per cent.
.25	.25
.50	.25
.75	.25
.90	.25
.90	.50
.90	.75
.75	.50
.90	.60
.90	1.00
.75	1.25

Note—If an alkalinity above 5 per cent. is desired in whey cream mixtures over 3 per cent. fat, the whey proteids cannot practically exceed 0.80 per cent.

The caseinogen is the especial part of the proteid which causes the most difficulty in digestion and yet we must bear in mind that it probably is more nourishing than the whey proteids.

(8) It is a matter of experience that we cannot in a substitute feeding start with the usual percentages of good human

milk, but that we are practically forced to start with much lower percentages. The reason for this has not yet been explained with entire satisfaction, but empirically we should begin, whether with premature infants or with infants born at term, with low percentages and gradually endeavor to increase the percentages up to those of the standard of good human milk. I have endeavored in Table B to show the various changes which in average cases are required for a substitute feeding.

TABLE B.

THEORETICAL BASIS FOR FEEDING A HEALTHY INFANT.

Age	Fat	Sugar	Pro- teids	Pro- teids if Split. Whey	Case- inogen	Amount at each feeding in ozs.	c.c.	Intervals betw. feed- ings in hrs.	Number of feedings in 24 hours
Prema- ture.	1.00	4.00	0.25	0.25	0.25	$\frac{1}{8}$ - $\frac{1}{4}$	3.75	1-1 $\frac{1}{2}$	24-18
At term	1.50	4.50	0.25	0.50	0.25		22.50		
End of 2nd wk.	2.50	5.50	0.50	0.50	0.25	1 $\frac{1}{2}$	45	2	10
End of 3rd wk.	3.00	6.00	0.75	0.75	0.25	2	60	2	9
End of 4th wk.	3.50	6.50	1.00	0.75	0.50	2 $\frac{1}{2}$	75	2	8
End of 6th wk.	4.00	7.00	1.00	0.90	0.60	3	90	2 $\frac{1}{2}$	8
End of 8th wk.	4.00	7.00	1.25	0.90	0.75	3 $\frac{1}{2}$	105	2 $\frac{1}{2}$	7
End of 12th wk.	4.00	7.00	1.50	0.90	1.00	4	120	2 $\frac{1}{2}$	7
End of 4 mo.	4.00	7.00	1.50	0.75	1.25	4 $\frac{1}{2}$	135	2 $\frac{1}{2}$	6
End of 5 mo.	4.00	7.00	1.75			5 $\frac{1}{2}$	165	3	6
End of 6 mo.	4.00	7.00	2.00			6	180	3	6
End of 8 mo.	4.00	7.00	2.50			7	210	3	6
End of 9 mo.	4.00	7.00	3.00			8	240	3	6
End of 10 mo.	4.00	6.00	3.00			8	240	3	6
End of 11 mo.	4.00	5.00	3.00			10	300	3	5
End of 12 mo.	4.00	4.75	3.50			10	300	3	5

The data given above are simply a guide to the rules for feeding of the average healthy baby; they are only approximate and not intended to be followed in cases of difficult feeding without due consideration to the individual requirements.

This table also presupposes, as I have already stated, that the original milk supply is fresh, clean and bacteriologically safe. When such a supply cannot be obtained we must do as well as we can in the individual case with whatever milk

can be obtained. It should, however, be thoroughly understood that disaster usually follows the modification of impure, old or dirty milk; and again it should be understood that improper modification of a pure milk may also be disastrous. I have known premature babies and babies at term with sensitive digestions either for fat, sugar or proteid to be made seriously ill and sometimes die where the milk supply was pure and the modification was that of good standard milk, fat 4.00, sugar 7.00, proteids 1.00 or 2.00 per cent.

THE QUESTION OF CEREALS.

The question of the use of cereals during the first year of life is an interesting one and one which has for many years been either advocated or opposed by those who have studied the subject of substitute feeding. Dr. Henry Shaw, of Albany, has contributed lately (January, 1904) some excellent work on starch digestion in infancy and his results confirm what has been known for some time, that the saliva of even very young infants contains a diastatic enzyme capable of converting small amounts of starch into maltose. This amylolytic function of the infant gradually increases as the infant grows older and seems to be well developed by the end of the first year. The small amount of starch which is digested in the early months is probably of little value, from a nutritive point of view, and the principal function of cereals at this early period of life is that of an attenuant in modifying the caseinogen of cow's milk. It seems that as the standard human milk presents fewer failures in feeding than any other food, and contains no starch, it would be well to avoid using cereals if possible. Since the modification of the caseinogen can be reduced to 0.25 by using the split proteid, and at the

same time using a high whey proteid, the total proteid can be kept over 1.00, it would seem that this latter method of treating the proteids is more rational and more in accordance with natural physiological laws. It is possible, also, that, although the diastatic power starts at birth, it is not necessarily intended to be used as it is still an undeveloped function and is liable to be over taxed if used too early. The use of cereals should not only be instituted according to the age, but also according to the diastatic power of the individual infants, since there is no doubt that some infants seem to need and thrive on cereals much earlier than do others, just as some infants can digest and thrive on much larger percentages of the caseinogen of cow's milk at a much earlier period than can others. What, however, is of special importance in this question of starch, is that the physician should not only decide in the given case whether to give a cereal, but also to know what strength of cereal he is giving, so that the especial infant may receive the percentage of starch which is best for it as it does the percentage of fat, sugar and proteids. This I have long advocated, and Dr. Maynard Ladd is at present working out a system at the laboratory by which we can order any percentage of starch which we wish in combination with the other percentages of fat, sugar and proteids. While I have not found the use of the cereal solutions necessary or advisable in the early months of life, yet later when they become of value in certain cases and also in the final weaning from modified milk to whole milk, an exact system will, I believe, be a most valuable adjunct to our feeding.

Cereal solutions can be added in place of boiled water in any combination with-

out altering the percentage of the fat, sugar and proteids, and the percentage of starch thus added may be accurately determined if the percentage of the cereal solution is known; for instance, if fourteen ounces of a one per cent. solution of barley water is added in place of the boiled water to a twenty ounce mixture, the percentage of starch in the mixture is

$$\frac{4 \times 1}{20} = 0.20$$

SYMPTOMS.

In many cases it is not by any means a simple matter to decide which element of the food is at fault from the usual symptoms of gastro-enteric disturbance. Sometimes it may be one element and sometimes another, and yet the symptoms being very similar we cannot always determine which is responsible. It may be an over amount of one element or an improper combination of elements which may result in a failure to gain in weight, so that it is only by beginning at once in the more intractable cases with a low percentage of various elements and combining them in various ways that we can finally solve the problem.

PEPTONIZATION.

In certain cases, although in my experience rarely, peptonization, either partial or complete, of a modified milk may benefit the especial case. If however we diligently and intelligently carry out the essential principles underlying the adaptation of cow's milk to the infant, and the more familiar and experienced we become with the principles of percentage modification and feeding, the less frequently will we resort to peptonization.

ACCURATE WEIGHING.

Probably the most important aid which we have in adapting a substitute food to

the special infant is the knowledge obtained by constant and accurate weighing. The variations in weight, whether in gain or loss, are so significant in connection with the question of the infant's nutrition, that we are working as much in the dark when we do not have this aid to our treatment as when we are working with empirical formulæ instead of with known percentages. A steady gain almost always indicates that we are working on the right principles, while an arrest or loss in weight indicates the opposite. A valuable guide as to the weight development of an infant is to be had by keeping a record of the weight index. The significance and convenience of this standard of comparison has been presented to you at this meeting by Dr. Ladd. The weight index expresses the ratio between the weight of any infant to the weight of the average normal infant of the same age. Expressed in per cent it represents the weight development of an infant compared with the average healthy infant whose percentage development we may reckon as 100. The variations from the weight index at birth gives a more accurate idea of the progress of an infant in its weight development than can be obtained by noticing the number of ounces gained or lost. For a means of comparison with other infants, of different ages and stages of development, it is of obvious advantage to express the

weight development in definite percentages.

FAILURES.

We should always remember that in a large number of cases of feeding failures are pretty sure to occur, but we must also remember in judging of our results that these failures are not always due to the food. It is a mistake that is frequently made by the physician, as well as by the laity, always to attribute loss of weight and gastro-enteric disturbance to a fault in the character of the food, while in reality they may occur from faulty metabolism and from unknown causes connected with bacteriological infection of the intestinal tract, from inhalation poisoning, from undetected malformation of the gastro-enteric tract, from unhygienic surroundings and from many other conditions.

FINAL REMARKS.

Let me reiterate what I have said before: Infants cannot be fed by rule of thumb. We can only lay down the general principles governing the milk supply and subsequent modification of the milk, and finally its adaptation to the individual infant. Each infant may be studied by itself. The most successful feeder of infants will be the man who is thoroughly acquainted with the many resources in our modern methods of percentage feeding and who can appreciate the individual needs of the especial infant.

Occurrence of Lipase in the Urine.

Conclusions:

1. It is possible to show the presence of lipase in the urine and to roughly estimate the quantity present.
2. Very little, if any, lipase is present in normal urine.
3. Lipase appears in the urine after a variety of insults to the pancreas of dogs.
4. It was found in greatest amount as a re-

sult of experimental acute hemorrhagic pancreatitis.

5. It was also found over a period of from three to five days after obstruction of the pancreatic duct.

6. It is probable that severe pancreatic trauma may cause the appearance of lipase in the urine.

7. The above are the conditions in which fat necroses are most apt to occur in human pancreatic disease.—(*The Journal of Medical Research*, May, 1904, A. W. HEWLETT).

DIFFICULT CASES OF FEEDING.*

L. EMMETT HOLT,
New York City.

In a ten minute paper very little in the way of detail is possible. We will therefore confine our discussion chiefly to the general principles involved. In the first place what do we include under the head of difficult cases of feeding? As popularly used this group comprises all infants that do not thrive readily with the usual care bestowed upon feeding cases. They are children who suffer more or less from chronic indigestion. The term "difficult" we see at once is a relative one. A mathematical problem may be difficult for one person and easy for another. So with a problem in feeding. We will all agree that the difficulties are few where the case is properly handled from the outset. How then are these difficulties created? Unlike poets, they are in most cases not *born* but *made*. They depend much less upon the condition of the individual child at birth than upon the way it has been handled afterwards.

There are several important ways in which these disturbances of digestion may come about. In the first place they may be due to bad nursing. This is true in a large number of cases and represents the experience of many modern mothers who strive hard for one or two months to nurse, but succeed only in producing a general disturbance of the child's organs of digestion.

The next large group of cases are those where the cause of the trouble is previous bad methods of feeding. The child may have been healthy at the start, but bad

advice or management is responsible for the want of success.

A third group, not the largest, but that perhaps which is the most unpromising and gives us the most trouble, are the cases in which the difficulty with the digestion is the result of some previous acute disease, either of the digestive organs, acute gastro-enteritis or ileo-colitis, or some other illness such as pneumonia or influenza. Before, things may have gone fairly well; but afterwards, so seriously deranged are the organs of digestion or so greatly is the child's general nutrition impaired, that progress is extremely difficult.

The above groups comprise the great proportion of the cases seen in practice, the remainder being children who are congenitally feeble or premature.

To determine exactly what are the difficulties to be overcome in any given case, is the first step in successful treatment. In other words, what is needed first is a diagnosis as to the precise nature of the indigestion which the case exhibits. To arrive at this, a full and complete history of the child's digestion from birth up to the time when it comes under observation should be obtained. At the first interview a physician should go most minutely into these details, as to the formula used, the methods of preparation, the quantity and frequency of the feeding, and the effect of each change of food upon the child's symptoms, in order to gain all possible advantage from previous experience. In no other way can we find out what particular phase of indigestion the child in

*Read by invitation before the Wayne County Medical Society, May 30, 1904.

hand presents. There is almost always a "screw loose" somewhere and the purpose of this investigation is to find out exactly where this is. We may often succeed best by doing exactly the opposite of what has previously been tried and failed. Where no history that is reliable can be obtained, a period of observation of several days or weeks may be necessary before a proper diagnosis can be made.

So far as symptoms are concerned, the cases may readily be divided into the gastric cases, those whose specialty is habitual vomiting or regurgitation of food and later mucus, and the intestinal cases, whose troubles are flatulence, colic, tympanites, constipation or diarrhoea, and after a time stools containing mucus. The two groups of symptoms may be combined in the same patient but generally one or the other predominates. With both we may have the same general symptoms of malnutrition—pallor, anæmia, poor circulation, fretfulness, irritability, loss of sleep and failure to gain weight. A third group of cases is seen where the children have no very marked symptoms of indigestion, but simply will not gain in weight. The stools often are large in proportion to the food taken, the appetite is sometimes poor, sometimes ravenous.

In the management of these cases it is important that the physician should study the case. There can be no success without careful thought and close observation. First, one should lay out some plan of treatment and then watch the patient. It is surprising how little real thought most physicians give to these cases of difficult feeding, but simply try in succession one thing after another in a haphazard way without any special reference to the indications presented by the child.

I have often been astonished to see how much more an intelligent nurse or mother could accomplish with only a book for a guide. Thus a patient out of town told me recently of an instance where a small baby had been in the hands of several physicians in succession and made no progress with any of them, when the mother and a friend bought a book upon infant feeding. They studied the child and studied the book and in the course of a few weeks had solved the problem of adjusting the food to the child's symptoms and the child gained steadily in weight. Most physicians do not realize how much attention these cases demand. Little can be accomplished by weekly visits. At first patients must be seen daily, the stools and weight observed, the mother or nurse questioned in order to find out what symptoms the child really has. It is almost indispensable that the physician have the coöperation in the house of some person who can faithfully and intelligently interpret the child's symptoms; he may be entirely misled by the mother or nurse, either through a prejudice against the food which is used or from their inability to judge the symptoms aright. It is surprising how often the difficulties disappear immediately when an intelligent nurse is put in charge of a patient.

In beginning the treatment of one of these cases it is important to attack the main symptom first, whether this is vomiting, colic or constipation, flatulence or diarrhoea and mucus stools. Our first aim should be to restore the digestive organs to something like a normal condition and until this has been accomplished, the child's weight must be ignored. It is well to explain to mothers in the beginning exactly what we are trying to do,

and why no permanent progress can be made until the digestion is right. It is important that the closest attention be given to details. It is not simply what is done, but how it is done, which determines success or failure. The innumerable ways which ignorant mothers and inexperienced nurses find of going wrong is simply beyond calculation, and our best efforts come to naught because of their mistakes.

Failure very often results because the physician is not sufficiently familiar with the subject to apply well-known principles to the case in point. Errors in milk formulas are made, not of fractions of a per cent. in calculating the fat or proteids, but often of two or three per cent.

Most of the problems in feeding are not insoluble ones. They are not in the last analysis really difficult, because the symptoms which comprise the difficulties vanish at once when the right thing is done. This is often the very simplest thing, showing that the difficulty after all is not with the child but with the doctor or nurse.

As an illustration let me cite the case of a private patient sent from North Carolina a few weeks ago to the Babies' Hospital, as a particularly difficult feeding case. The birth-weight was 9 pounds. The weight on admission when six months old was 7 lbs. 13 oz. The usual history was given that "everything" had been tried and everything had disagreed. For several weeks previously the food had been condensed milk, for the two weeks before admission malted milk. The child was hungry, constipated, losing weight and on examination showed typical symptoms of marasmus; six months old! 1 lb. 5 ounces less than at birth, and suffering almost constantly from

digestive symptoms since its advent. The outlook certainly was not promising. As in all cases of doubtful digestion, a simple milk mixture with low percentages was ordered as a test meal: fat 1, sugar 6, proteids .90; i.e., one part milk, three parts water, with sugar and lime water, and of this there was given three ounces q. 3h. This was increased gradually, in a week to fat 2, sugar 6, proteids 1.75, i.e., equal parts milk and water, with sugar and lime water. *Result:* In the first thirteen days, the child gained one pound; never had a symptom of indigestion, bowels moved regularly every day, normal smooth yellow passages.

The general rules for managing these cases may be summed up in a few words viz.: milk modifications for most patients. The number of feeding problems that cannot be solved by a properly modified milk are small. Vomiting babies as a rule present the greatest difficulties. In all such cases one should especially avoid formulas with high fats; food mixtures made up from plain milk do much better than top-milk or milk and cream mixtures. With vomiting babies also, the interval between feedings should be made three hours for the early months, and four hours for the later months of the first year. Smaller meals of a stronger food usually are better than larger meals of a weak food.

Peptonizing the milk is of considerable value and helps many cases.

Nearly all vomiting babies are made worse by high sugars, and hence symptoms are usually aggravated by the addition to milk of Mellin's or Eskay's food, malted or cereal milk, or by using these substances alone in place of milk.

Infants with intestinal symptoms present most frequently the combination of

colic, constipation and curds in the stools. Such patients are almost always relieved by lowering the proteids, usually by a greater dilution of the milk. In many such cases the most striking results are seen from whey and cream mixtures—where the proportion of lactalbumin is increased and that of the casein much reduced. This can be most easily done at the milk laboratory, but can with care be successfully accomplished at home. Infants with thin green stools and much gas require lower fats and lower sugars, precisely as to the vomiting cases.

Infants who simply will not gain in

weight, who are comfortable only when the food percentages are made very low, and who suffer from indigestion immediately when any percentages are raised, are best treated by wet nurses.

Finally, we must be sure that the trouble is not with the food but with the general hygiene of the child.

Time and patience are required for permanent results, for no miracles are wrought in these cases and quick results cannot be expected where symptoms have lasted several months; but with careful watching, success crowns our efforts in the majority of cases.

Blood Pressure in Surgical Diseases of Children.

Conclusions:

1. Ether causes a rapid rise in the blood pressure as indicated by the Riva-Rocci apparatus.
2. This rise is followed by a very much slower fall in the pressure.
3. Ordinary operative procedures seem sometimes to increase the pressure slightly.
4. With the establishment of shock the pressure is lowered but,
5. Other signs of shock, the more rapid pulse, the more feeble respiration, the cold, clammy skin, are noted earlier during operations than is a drop in blood pressure.
6. Conversely patients practically pulseless at the wrist can withstand operations.
7. Crying, vomiting, retching, struggling or changes in position affect the blood pressure so much more than operative procedures as often to render pressure charts practically valueless, unless all these circumstances are noted.—(*Boston Medical and Surgical Journal*, March 10, 1904, WILLIAM E. FAULKNER).

A New Method of Cardiac Examination.

—The pulse rate and the blood pressure are determined in a patient in a reclining position. Both iliacs are then compressed for a period of from 2½ to 5 minutes in the inguinal region and the

changes are noticed in the pulse rate and in the blood pressure. In a heart acting normally there is found an increase in the blood pressure of from 5 to 15 mm. of the column of mercury, while the pulse rate remains the same or is slightly diminished. With a hypertrophied heart, the blood pressure is raised from 15 to 40 mm., while the pulse remains the same or is increased. When a slight insufficiency exists, the pressure is 0 and the pulse the same or greater. A marked cardiac insufficiency is accompanied by a minus pressure and an increase in the pulse rate. This method is readily applied. The only possible unfavorable circumstance is the effect of physical excitement but this may be avoided with care.—(*Deutsche Medizinische Wochenschrift*, June 4, 1904, KATZENSTEIN).

Etiology of Affections of the Left Heart in Childhood.—The writer concludes from his researches that acute polyarticular rheumatism is the most frequent cause of acquired cardiopathies. In children endocarditis from rheumatism or other infections is more rare than in adults. The majority of cardiopathies in children, which are supposed to be acquired, are really the result of arrested or faulty embryonal development, exhibited before birth or in the first years of extrauterine life.—(*La Riforma Medica*, March 11, 1903, L. CONCETTI).

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Editorial

THE GREAT PROMOTER OF MEDICAL ORGANIZATION—DR. N. S. DAVIS.

June 9th, 1817, and June 16th, 1904, mark the entrance and exit from human life of Dr. N. S. Davis. Every moment of this was spent in serious activity—an activity that at once promoted his own good and the good of others. He always regretted being denied a college training. Beginning the study of medicine at the age of 17, he graduated, after three courses of lectures, from the College of Physicians and Surgeons at Fairfield, N. Y. Indicating the bent of mind, his thesis contended that bodily heat arose from metabolic processes. Three years later the New York State Medical Society awarded him a prize for the "Best Analysis of the Discoveries on the Physiology of the Nervous System." Immediately after graduation he joined the Broome County Medical Society, and thenceforth till death, took an active part in the evolution of medical societies—medical organization. Eight years later he introduced into the New York State Medical Society the resolutions on which the American Medical Association was founded. In general he sought to follow the plan of our representative form of government. He was stimulated in this work by the professional practices of that day. He saw hordes of the ignorant,

vicious and indolent wrecking the profession he loved and set himself to the task of cleaning the Augean stables by organization. His keen eye was over all and his iron will largely dominated the American Medical Association.

From the village of Vienna, Oneida Co., N. Y., he moved to Binghamton, and thence to New York City, showing his fibre in this latter place by his fearless attention to the stricken during the terrible cholera epidemic.

At Binghamton we find him demonstrating anatomy on a cadaver to medical students. Later in New York City he was lecturer and demonstrator of anatomy in the College of Physicians and Surgeons. In 1848 he removed to Chicago and taught Physiology and Pathology in Rush Medical College. Later he was professor of practice of medicine. Later still he left Rush to aid in founding the Chicago Medical College on an advanced basis of greater system and higher requirements. Here he remained so long as able to work, and from this began a crusade against the standards which were lower than his.

True to his past record he started the Chicago Medical Society and the Illinois State Medical Society. Through work in these he sought to promote organization elsewhere.

In New York he was editor of *The Analyst*, in Chicago of *The Chicago Medical Journal*, *The Chicago Medical Examiner*, and *The Journal of the A. M. A.*

It is questionable whether the latter *Journal* could have been successfully established except for Dr. Davis. To its inception he gave his best thought, and for six years contributed time, energy, and money for its support.

He was active in organization and support of Chicago Academy of Science,

Chicago Historical Society, Illinois Microscopical Society, Home for Reformation of Inebriates, and the American Medical Temperance Association.

In all these and allied organizations he was an active factor, and little was done without his approval. By education, general and professional, made effective through organization, he sought the ceaseless growth of the profession towards its highest ideals.

Personally Dr. N. S. Davis was a pillar of strength to the weak, a hope to the discouraged, a stimulus to the indolent, an inspiration to the doubter. To all he has ministered of good by his lofty ideals, his unwavering faith, his undaunted courage, his indefatigable industry, his Puritanic personality.

AMERICAN ACADEMY OF MEDICINE—TWENTY-NINTH ANNUAL MEETING.

Because its work is unique, this body is little understood by the profession. Year after year, with no hope of reward except the pleasure of trying to add its mite in the evolution of the best possible medical profession, this band has continued its way. Never more than ninety have registered at its meetings, more often less than fifty, but enthusiasm, kindly fellowship and helpful endeavor are always present. As might have been expected, there have been difficulties of organization to overcome, but these too were part of its work.

Though limited in membership (limitations of general, professional, mental and moral equipment), its unceasing efforts are for the entire profession. It demands intelligent study in selecting, educating and organizing physicians. It

tries to do what it can to throw light on the problems involved. Rightly understood, it would have the practical support of every one who loved the medical profession. In fact this support, more manifest with passing years, will increase as individuals learn to care more for the profession and its work. Among the topics discussed were the necessity of exact knowledge of the composition of drugs and foods used by the physician, hygiene in the public schools, analysis of the laws in the various states, relation of physicians to dentists; some of these topics were considered by two or more papers and much discussion. Any physician having the training of an A. B. degree from a good literary college should apply for membership to the Secretary, Dr. Charles McIntire, of Easton, Pa., and join this band of workers in the field of "Medical Sociology."

PASTEUR'S INFLUENCE ON MEDICINE.

As an expert in physics and chemistry, Pasteur began those researches which revolutionized medicine. Thus observations on the polarization and facets of their crystals led him to discover that indifferent racemic acid crystalizes into equal quantities of ordinary dextrorotary tartaric acid and levorotary tartaric acid. Molecular constitution was shown to modify crystalline form, change the plane of polarization and so form the basis of the modern doctrine of the asymmetrical carbon atom that has cast such light on our ideas of the arrangements of the atoms within the molecules of organic substances.

These researches in the tartrates led Pasteur to recognize a series of optically

inactive compounds, including malic acid and amylic alcohol, and formed the bridge by which he laid the foundations of a new biological science which has completely changed our conceptions of medical problems.

He added fermenting albuminous material to pure crystallized ammonium paratartrate, and found that by the polariscope it rotated to the left. This result he ascribed to micro-organic life. He was soon called to a professorship in Lillie, a region of distilleries, and his students called for training in industrial chemistry, so that problems of fermentation were forced upon his attention. The ruling idea of this process was purely chemical as represented by Liebig. Pasteur determined to study the subject from the standpoint of living organisms as the cause of fermentation. The result was that he demonstrated the specific organism of lactic acid fermentation and utterly routed the chemical theory and gave birth to the new science of bacteriology.

His researches on fermentation enabled him to utterly rout the doctrine of spontaneous generation. Turning to the study of vinegar, he demonstrated the micro-organic nature of the vinegar film and placed acetic acid fermentation by the side of lactic and butyric acid, thus giving the vinegar manufacturers a scientific foundation.

His studies of the diseases of wine were even more helpful in that they showed that sour, bitter, and muddy wines depended upon the presence of definite ferments, which could be controlled by moderate heat. Hence the origin of heat as a sterilizing agent (Pasteurization). In 1865 Pasteur was directed by the Government to investigate the origin of the disease, which was ruining the silk industry of France. He proved that

there were two distinct diseases from which the silk worms died, viz.: corpuscle and a bacterial affection of intestinal origin. The former was due to the psorosperm and the latter to a specific bacterium. The corpuscle disease was eradicated by a careful system of breeding from eggs shown by microscopic examination to be free from infection, thus eliminating the chief source of the trouble.

The financial, and sociological benefits of this study are so large as to stagger the imagination, but far beyond is their value in opening the realm of animal pathology and modern medicine, as the corpuscle disease has striking analogies to some human diseases.

Because of hatred to the Germans, and love for France, he sought improvement of French brewing by the use of closed coolers and use of sterilized air for aerating the beerwort. The remainder of his life was devoted to, (1) the investigation of the relations of micro-organisms to the etiology of disease, (2) the experimental study of immunity to virulent micro-organisms.

Pasteur gave to biological science a definite method of permanently modifying the pathogenic characters of certain micro-organisms.

For many years Pasteur studied the protective action of attenuated virus, resulting in his finding an immunization of human beings bitten by rabid dogs, by repeated inoculations during the long period of incubation.

Pasteur's mistakes and shortcomings were many, as are those of every pioneer in an untrodden wilderness, but his example and his methods have enabled others to correct these, and the work still advances.

On his seventieth birthday he exhorted his students "to withstand unfruitful

skepticism; to live in the serene peace of their laboratories and libraries; to ask what they have done for their education or their country, so that they may have the consciousness of having contributed something to the progress and welfare of humanity, and be able to say as they neared the great goal, 'I have done what I could.' "

DEATH OF DR. FELIX FETTIG.

Dr. Felix Fettig was born in Baden Baden, Germany, May 17, 1834, and died at his home in Detroit, March 11, 1904. After leaving the public schools, he attended a preparatory school. He matriculated at the University of Heidelberg, and studied there about two years. Through misfortune he was obliged to leave before completing his course.

He came to this country in 1856 and served in the army of the North throughout the Civil War. During the last year and for a short time thereafter he was stationed at the Hospital at Harper's Ferry. From there he came to Detroit, and resumed the study of medicine at the Detroit College of Medicine, graduating on the twenty-eighth day of February, 1877. He settled in Detroit, and has been in active practice ever since. He was a member of the Schiller Lodge, F. & A. M., A. O. U. W., the Wayne County Medical Society and the Michigan State Medical Society.

BORAX AND BORIC ACID—THEIR USE IN FOOD.

Prof. Wiley, of the Agricultural Department, Washington, reports on a study of borax and boric acid taken regularly with food, by his famous "poison squad."

This squad is composed of twelve young men who volunteered to eat food treated with various chemicals under his direction, so that he could study the effects.

This investigation showed that even seven and one-half grains daily of boric acid or its equivalent in borax, if long continued, produce evil effects. Occasional doses had no ill effects, if small, upon the perfectly healthy. But in the sick, the young, and debilitated the reverse must be considered. If such preservatives are continued, it must be on the ground that the poisons from the decomposing food would do more harm than the drugs. In any case, the careful study by Prof. Wiley places the matter upon a scientific basis—boric acid and its soda salt is a good medicine, but a bad food.

PRIVATE PRACTICE IN GERMANY.

Under this title the *London Lancet* reviews a novel by Schullern, dealing with a doctor's life among the middle and lower classes in Germany. As human nature is much the same everywhere, the picture thus drawn will find a wide sympathetic response. Extensive medical knowledge is treated with the technique of the skilled novelist. The hero sets out on his career full of faith in humanity and enthusiasm for his work. One by one his hopes and aspirations are squelched by the meanness and selfishness of those with whom he is brought into contact, until in despair he renounces his profession and seeks consolation as a tiller of the soil. Such absence of delicacy, gratitude or even honesty as displayed by Dr. Hellman's patients might seem exaggerated, were they not seen in other countries.

County Society News.

BAY COUNTY.

At the regular meeting of the Bay County Medical Society, June 13, 1904, at Bay City, William Bishop read a paper entitled, "Personal Conclusions Based Upon Two Hundred Operative Cases of Appendicitis."

Abstract:

I. Symptoms—Each case presents some combination of the following symptoms:

(1) Pain—At first general over the whole of abdomen or referred to the epigastrium. It soon localizes itself to the appendicular region.

(2) Tenderness—This was present in all of the writer's cases.

(3) Rigidity of right rectus abdominis muscle. This is often to be found.

(4) Vomiting may or may not be present.

(5) Constipation usually found.

(6) Temperature ranged between 97° to 104 $\frac{3}{4}$ ° F.

(7) Pulse ranged between 65 to 160 beats per minute.

(8) Tympany may or may not be present.

(9) Chill may occur.

(10) Tumor may be palpable in certain cases.

II. Indication for operation:

Whenever we find persistent localized tenderness over the appendix, this is in itself an absolute indication for operative procedures, having in view the removal of the vermiform appendix.

III. The time to operate:

"I am going to operate upon my cases of appendicitis as soon as I see them first, last and always."

A. W. HERRICK, Sec'y.

GENESEE COUNTY.

DEAR DOCTOR:—The following is the report of the committee appointed at the January meeting to investigate the matter of a uniform fee-bill and to devise a plan whereby the impositions of the "dead beat" may be abated. Please give the report careful consideration as some action will be taken at the next meeting which will be held at Fenton and Long Lake, July 26. The committee of arrangements has planned some pleasant social features in which the ladies will be invited to participate.

Respectfully yours,

H. R. NILES, Sec'y.

Mr. President.—The committee to which was referred the matter of establishing a fee-bill for this Society and also a "dead-beat" list, having carefully considered the two subjects, respectfully report as follows:

First, taking the "dead-beat" list—We do not think it advisable to formulate such a list, because while it would be beneficial if well cared for, from all that your committee can gather concerning similar lists here and in other places, we believe it would surely prove a failure.

The fee-bill, we believe, would be proper and helpful if adopted. Neither a maximum nor a minimum list alone is considered sufficient nor is it thought advisable to bind the members of this Society to follow such a schedule invariably, because they cannot and would not do so.

But a list with a fair amount of leeway in its prices, to which to refer at times, would aid materially in fixing upon a charge, and when questions arise concerning the propriety of a charge made, a fee-bill backed by the Society would be a valuable aid. To those who have only recently begun work in this county it would be especially of use.

Therefore your committee has formulated the following schedule of fees for medical services, basing it upon the prevailing prices in this region and recommend that it be adopted by the Society.

J. G. R. MANWARING,

Chairman.

GENERAL PRACTICE.

First visit, prescription, and advice.....\$1 to \$3.
Each subsequent visit to same patient.... 1 to 2.
Visit with treatment or dressing..... 1 to 3.
Night visit between 10 p. m. and 7 a m \$1.50 to 3.
Additional visit to patient in same family .50 to 1.
Visit and consultation 5. to 10.
Joint attendance after consultation..... 1. to 3.
Mileage in addition to visit, one way .50 per mile.
Rising at night and prescribing..... 1. to 3.
Examination of insane person and certificate5. to 25.
Physical examination of chest..... 1. to 5.
Small pox and varioloid10.00 per visit.
Other contagious diseases.....1.50 to 3.
Services as medical experts.....25. to 50.
Attendance at coroner's inquest,(autopsy extra)5.

OFFICE PRACTICE.

Prescription and advice in ordinary case...50 to 1.
Examination and opinion 1. to 5.
Vaccination in office50 to 1.50.
Fitting truss in office.....2. to 5.
Gynecological treatments1. to 3.
Fitting pessaries2. to 5.

Gonorrheal cases, each attendance1. to 10.
 Syphilis cases1. to 10.

OBSTETRICAL WORK.

Ordinary deliveries10.
 Detention after six hours.....1. per hour.
 Instrumental deliveries and other difficult cases5. to 25. extra
 All visits made subsequently, after the first three, the same as for other cases.....1. to 3.
 Abortions and miscarriages10.
 Repairing lacerations at once, extra.....5. to 15.

SURGICAL PRACTICE.

Capital operations100. to 500.
 Secondary operations25. to 100.
 Amputations of a finger or toe.....
 Tapping abdomen
 Operation for fistula in ano.....5. to 50.
 Operation for cure of hydrocele.....
 Removal of tonsil
 Circumcision
 Opening deep seated abscesses.....
 Opening minor abscesses.....1. to 5.
 Tapping hydrocele1. to 5.
 Extraction of foreign bodies from pharynx 5 to 50
 Removal of polypi from nose or ear... 5. to 50.
 Plaster dressings and other fixed dressings 2. to 15.
 Reduction of hernia by taxis.....3. to 10.
 Extraction of foreign bodies from the eye, ear, nose, urethra, wounds1. to 25.
 Introduction of a catheter or bougie....1. to 3.
 Post-mortem examination25. to 50.
 Dislocations of large joints.....25. to 50.
 Of other joints.....5. to 20.
 Reduction and first dressing of fractures of the femur and important open fractures of this and other bones25. to 50.
 Reduction and dressing of fractured bone of leg, arm or forearm10. to 50.
 Anaesthetics for the extraction of teeth..2. to 5.
 Anaesthetics for other surgical purposes.5. to 10.
 Attendance upon surgical cases, per visit.1. to 3.
 Medicines in all cases are extra.

ALL FEES ARE PAYABLE AT THE TIME THE SERVICES ARE GIVEN.

It shall be considered dishonorable for any member of this Society to attend families or individuals by the year, or to make any other bargain or arrangement the tendency of which will be to avoid the full purport and effect of the foregoing list of charges.

All bills will be considered due when the services are rendered and statements are to be presented and settlement requested at least twice a year. It is particularly recommended to mem-

bers of this Society that their bills be presented at the close of each year.

It shall be considered proper to make reductions to all persons in moderate circumstances.

In all cases it shall be the duty of the physician or surgeon who invites counsel or asks assistance in an operation, to notify the patient or his friends, at or before the consultation or operation, that the fee—mentioning the sum—is expected at the time the service is given; in case it shall not be so paid the attending physician shall, unless otherwise requested by the one called in, include the charge or charges in his own bill or send in both accounts together, and he shall account to the consultant for his proportion of the money paid on said account.

H. R. NILES, Sec'y.

SAGINAW COUNTY.

TREATMENT OF COMPOUND COMMINUTED FRACTURES.

O. P. BARBER, SAGINAW.

Abstract:

1. The object of this paper is to lay before the medical profession a practical method of holding these broken bones and sloughing tissues in such a manner that they can be kept clean without the daily changing of the splints and dressings, made necessary by the constant discharge of pus.

2. The method employed is as follows: Allow for illustration that you have a compound comminuted fracture of the leg midway between the knee and ankle joints. Cut out from a sheet of heavy wrapping paper a pattern of the exact size of the uninjured leg, one that will wrap and enfold that limb from the upper third of the thigh down to and including the foot. Lay this pattern on and cut its duplicate from a roll of coarse-meshed sieving, made from galvanized iron-wire. Get the meshes a half inch or larger if you can. Soak or boil it in your carbolic acid solution. Line it with sterilized plain gauze after bending and fitting and trimming it to fit the injured limb. Before applying the wire gauze over the seat of fracture, place a thin layer of gauze, but at other points such as ankle, foot and knee, use more of the gauze, or in its place use cotton. Over this long stocking of coarse iron wire roll your plaster of Paris bandages everywhere except over the seat of the fracture. After putting on two or three layers of plaster bandage, lay on strips of half wound hoop wire, bending them outward

over the fracture and letting them extend up over the instep and leg to within two or three inches of the fracture. When they reach this point they should be bent out so as to curve out a reasonable distance and pass on up the leg to the end of the splint. Have three of these strips and incorporate them solidly in the plaster.

3. What does this method accomplish?

(a) This splint will hold the bone exactly where it is placed.

(b) You can get at every portion of the mangled tissue without disturbing bone, torn muscles, or cell-growth in the slightest degree.

(c) Perfect drainage is obtained through the meshes of the wire and the nozzle of an irrigator can be thrust through whenever needed and all the pus and debris can be washed away.

VAN BUREN COUNTY.

The Van Buren County Medical Society held its regular meeting at South Haven June 16th. S. C. Graves, of Grand Rapids, read a paper entitled, "The Bougie-Catheter in Retro-Catheterization."

Abstract:

Among the most distressing and incapacitating as well as perilous of surgical maladies, those due to infection of the urinary tract and, at the same time, associated with obstruction to the normal evacuation of urine, must of necessity take high rank. Prominent in this category are urethral rupture and stricture with all their attendant woes.

Etiology of stricture: This condition of affairs is quite generally brought about by trauma (rupture) or by inflammation (urethritis specifica).

When should retrocatheterization be performed?

1. In cases of urethral rupture, when there is a doubt as to the ability on the part of the operator to secure the proximal portion of the urethra, a high section should be made.

2. In cases of stricture where to gain entrance into the stricture reaches a magnitude greater than the danger to the patient of a high section in the hands of the operator, the section should be made.

3. It must be remembered that under the circumstances which obtain in cases suitable for this method of treatment, entrance per vias naturales for drainage and antiseptic flushings is out of the question.

4. It should never be attempted in the absence of ample justification as it is always a perilous proposition by reason of the danger to the patient of the probable absorption of toxins by the lymph vessels in the exposed areas of an incised cavum retzii.

5. It should be done without delay in the presence of factors calling for it.

Method:

1. Entrance must be made above pubes.

2. Edges of wound should be treated prior to opening of the bladder with zinc stearate.

3. Bladder is exposed. The urine is withdrawn by aspirator. Bladder (through needle) is washed repeatedly with warm, weak boracic acid or some other mild antiseptic solutions.

4. Bladder is incised and the internal urethral orifice is localized by passing the finger into the bladder.

5. A gum elastic catheter is entered and is easily pushed down to perineal wound.

6. End of bougie is cut down upon and the writer's "Coupler" drainage apparatus is inserted and sutured in position.

7. Bladder wound is closed with fine, plain cat gut for the mucosa and larger chromicized cat gut for the musculo-fibrous layer.

8. The abdominal wound, down to the vesical wall, should be provided with provisional sutures of worm-gut, tied loosely and packed. The same can be closed definitely in a few days or a week if the vesical sutures hold.

The bougie-catheter, I think, meets all the indications. It drains and at the same time maintains urethral patency, both of which features are quite necessary for the successful outcome of the case.

The writer reports two cases treated successfully in this manner.

N. A. WILLIAMS, Sec'y.

WAYNE COUNTY.

The Wayne County Medical Society held its last regular meeting ere the summer recess, May 30, 1904. The Society entertained at a banquet the American Pediatric Society. After the repast was finished a symposium on Infant Feeding was given by several of the visiting doctors.

C. G. Jennings, of Detroit, acted as toastmaster.

"The Influence of Breast Feeding on the Infant's Development, by Henry D. Chapin, of New York City. (See THE JOURNAL, August, 1904, page 334).

"Cow's Milk for Infant Feeding" by Augustus Caillé, of New York City. (See THE JOURNAL, August, 1904, page 338).

"The Milk Laboratory," by John L. Morse, of Boston. (See THE JOURNAL, August, 1904, page 341).

"Substitute Feeding During the First Year," by T. M. Rotch, of Boston. (See THE JOURNAL, August, 1904, page 344).

"Feeding in Difficult Cases During the First Year," by L. Emmett Holt, of New York City. (See THE JOURNAL, August, 1904, page 349).

Drs. Jacobi, of New York City; Douglas, of Detroit, and Northrup, of New York City, made a few remarks.

GUY L. CONNOR, Sec'y.

Miscellaneous.

NEWS ITEMS.

Dr. Stanley Hall says, "Excessive individualism insidiously instils the same aversion to 'brute maternity' as does luxury, overindulgence, or excessive devotion to society. Just as the man must fight the battles of competition, and be ready to lay down his life for his country, so woman needs a heroism of her own to face the pain, danger, and work of bearing and rearing children, and whatever lowers the tone of her body, nerves or morals so that she seeks to escape this function, merits the same kind of opprobrium which society meets out to exempts who cannot or will not fight to save their country in time of need."

The Des Moines (Iowa) post office posts the following: "Hereafter preference will be given clerks married and having large families."

Diphtheria mortality during the past twenty years in New York city has decreased sixty-five per cent by the use of antitoxic serum, but cancer has increased fifteen per cent. Acute respiratory diseases have increased a like amount, while disease of the kidneys and circulatory organs have increased forty per cent.

The Wayne County Medical Society, at Richmond, Ind., lately voted in favor of reporting every case of tuberculosis to the proper health officer.

Hereafter no consumptive may teach in the Indiana public schools. At present two hundred and fifty are so engaged.

Dr. Jay F. Schamberg says that from 1901 to 1903 inclusive, six hundred and fifty have died from small pox in Philadelphia, Pa. All might have been saved by vaccination.

The Neenah (Wis.) Board of Health affirms that kissing is dangerous, that it spreads contagious diseases, and asks the public to discontinue the custom for the public good.

It is said that one Detroit physician disinfects all his money ere he spends it. He practices preventative medicine.

The United States government has employed experts to determine the nature of claims that the Hot Springs, Ark., contain some radio-active substance.

It is estimated that over three hundred and fifty ounces of cocaine is sold to the dissolute class in Cincinnati each month.

Judge Davis, of Philadelphia, says that "any person who offers his services as a physician to treat diseases, deformities, and injuries by any means whatsoever, including electricity, clairvoyance, faith healing, etc., is practicing medicine and the doing this without a license is illegal." Sound judge is he.

All the great American medical weeklies published simultaneously the general addresses delivered at the late meeting of the American Medical Association. This is all right for those who subscribe to but one, but wearisome to such as subscribe for several or all.

Sir Henry Thompson, Bart., M. B., died at his London home April 18th, aged eighty-four. As a genito-urinary surgeon he was well and widely known, counting among his clientele, kings and emperors. He took great interest in topics of the day, and by articles and speeches did much to create public sentiment, on such subjects as moderate drinking, cremation, diet in relation to health and longevity. His novels had more than local interest. As a painter he was even more successful. As a host he was famous for his

eight courses, for eight people, at eight o'clock. Both company and food were carefully selected, so that during a quarter of a century the most famous figures of art, letters, science, politics, diplomacy and fashion were his guests. Sir Henry Thompson was a live part of his generation.

Roberts Bartholow died in Philadelphia May 10th, aged seventy-two. He was widely known for his skill as a practitioner, teacher, investigator and author.

Dr. James Henry Dunn was found dead in bed at the Southern Hotel, St. Louis, after reading a paper before the American Surgical Association the same day. In connection with the Minneapolis Hospitals and the chair of surgery at the University of Minnesota, he was celebrated for his excellent work.

The American Neurological Association will hold its next annual meeting at St. Louis, Mo., September 15, 16, 17, 1904.

The American Association of Obstetricians and Gynecologists will hold its annual meeting at St. Louis, Mo., September 13, 14, 15, 1904.

The American Electro-Therapeutic Association will hold its annual meeting at St. Louis, Mo., September 13, 14, 15, 1904.

The Association of Military Surgeons of the United States will hold its next annual meeting at St. Louis, Mo., October 10-15, 1904.

The Hawaiian Territorial Medical Society will hold its annual meeting at Honolulu, December 3, 1904.

The fourth Pan-American Medical Congress will meet in Panama, December, 1904.

The Wyoming State Medical Society will hold its annual meeting at Rawlins, September 13, 1904.

The Medical Society of the State of Pennsylvania will hold its annual meeting at Pittsburg, September 27, 28, 29, 1904.

The Colorado State Medical Society will hold its annual meeting at Denver, October 4, 5, 6, 1904.

The Idaho State Medical Association will hold its annual meeting at Lewiston, Oct. 6, 7, 1904.

The Vermont State Medical Society will hold its annual meeting at Rutland, October 13, 14, 1904.

The New York State Medical Association will hold its annual meeting in New York City, October 17, 18, 19, 20, 1904.

The Medical Society of Virginia will hold its annual meeting at Richmond, October 18, 19, 20, 21, 1904.

CHANGE IN MEMBERSHIP.

(May 15th to July 15th.)

NEW MEMBERS.

C. W. Ash, St. Clair, Mich.
O. S. Bailey, Lansing, Mich.
G. M. Cliffin, Adrian, Mich.
J. Foster, Lansing, Mich.
D. G. Lawton, Cheboygan, Mich.
L. J. Marshall, Adrian, Mich.
C. S. Maynard, Paw Paw, Mich.
E. Newcomb, Blissfield, Mich.
F. C. Penoyar, South Haven, Mich.
F. T. Roach, Mattawan, Mich.
F. R. Robson, Reading, Mich.
F. M. Stearns, Frontier, Mich.
A. E. Thompson, St. Clair, Mich.
L. W. Toles, Lansing, Mich.
R. C. Traver, Somerset Center, Mich.
P. J. Woolsey, South Haven, Mich.

CHANGE OF ADDRESS.

F. A. Baldwin, St. Louis, Mo.
J. H. Burley, Almont, Mich.
J. H. Egbert, Dunnville, Ont.
W. Harper, Henderson, Mich.
T. P. Lyman, Superior, Wis.
R. M. Olin, St. Louis, Mo.
E. A. Romig, Newberg, Oregon.

DIED.

James Hosking, Kearsarge Mine, Mich.
R. Johnston, Milford, Mich.

BOOKS RECEIVED.

SYSTEM OF PRACTICAL SURGERY. By Prof. E. von Bergmann, M. D., Prof. P. von Bruns, M. D., and Prof. J. von Mikulicz, M. D., Vol. III. Translated and edited by William T. Bull, M. D. Lea Brothers & Co. Philadelphia and New York, 1904.

TRANSACTIONS OF THE AMERICAN ROENTGEN RAY SOCIETY. 1904.

TRANSACTIONS OF THE RHODE ISLAND MEDICAL SOCIETY. 1903.

Correspondence.

SECRETARY.—I am in receipt of your official notice that the State Medical Society has conferred upon me the position of an honorary member of its body. Permit me, through you, to thank them for this expression of confidence in me and endorsement of my course as a professional man. All through my professional life I have striven to do my duty at all times, in all places, to all men.

This expression of the feelings of the Society of which I have long been a member, comes to me, when tired and worn with professional services, with the fragrance of roses, and will be long treasured as one of the happiest episodes of my life. Please be the bearer of my thanks to the Society.

Very respectfully and fraternally,

SAMUEL P. DUFFIELD, M. D.

Dearborn, Mich., July 9, 1904.

SECRETARY.—You kindly informed me, under date of the 7th inst., that the Michigan State Medical Society has elected me to honorary membership. I value the compliment, and shall hold it as an honor.

Thanking you for your courtesy in the matter, I am, Very truly yours,

G. K. JOHNSON.

Grand Rapids, July 12, 1904.

SECRETARY:—Yours of the 7th inst. received informing me of my election to honorary membership in the State Medical Society. This honor I highly appreciate as coming from the goodwill of those with whom I have been in association since 1873 (when I became a member) in our life work.

HUGH MCCOLL, M. D.

Lapeer, July 8, 1904.

SECRETARY:—I have the honor to receive your notification of election as honorary member at last

annual meeting, and am indeed very grateful for the kindness of this election. I esteem the honor very highly, as one conferred by the Michigan State Medical Society. Sincerely,

ALBERT BENJAMIN PRESCOTT.

Ann Arbor, July 11, 1904.

EDITOR.—In pursuance of the power and authority vested in this Board, it is hereby ordered:

That typhoid fever shall be a disease dangerous to the public health within the meaning of Section 12 of Act No. 10 of the Public Acts of 1895, as follows:

"Said board may by its rules or ordinances, cause any householder who knows that a person within his family is sick of smallpox, diphtheria, scarlet fever or ANY OTHER DISEASE DANGEROUS TO THE PUBLIC HEALTH, and every keeper of a hotel or lodging house who knows that a person within said hotel or lodging house is sick with any such disease, to immediately give notice to the Board of Health of said city, and upon the death or recovery and removal of such person, to cause the rooms occupied and the articles used by him to be disinfected in a manner approved by said Board, and they may by like rules and ordinances cause any physician who knows that a person whom he has called to visit is infected with smallpox, diphtheria, scarlet fever or ANY OTHER DISEASE DANGEROUS TO PUBLIC HEALTH, to immediately give notice thereof to the Board of Health."

DETROIT BOARD OF HEALTH.

EDITOR:—THE JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY treated in its last issue a subject of great interest, namely, "A Clearing House for Medical Supplies of Unknown Composition." This question is very similar to a matter which has for many weeks, prior to the meeting of the State Medical Society, engaged the continued and earnest attention of the medical profession all over the country and especially the zeal of the National Auxiliary Congressional and Legislative Committee of the American Medical Association. A very important measure, indeed, is pending before the Senate of the United States. Senator Hepburn's speech (April 6th, 1904) contains among other excellent remarks the following:

"The term 'drug' as used in this act shall include all medicines and preparations recognized in the United States Pharmacopœia for internal and external use.

"The definition ends there. We have added to that this provision:"

"Also any substance intended to be used in the cure, mitigation, or prevention of disease."

"Mr. President, the people who are nearest to the sick, who know most about this question, are the physicians of the country."

"I have here [exhibiting] petitions from practically all of the medical organizations of the United States and from practically every State in the Union; and if any Senator desires to know the sentiments of the physicians in his own State, I will take great pleasure in furnishing him with their sentiments as voiced in these petitions. They say in these petitions and in the letters which I have to present to the Senate that they can not with certainty any longer write a prescription with full confidence that it is going to have the results they desire attained. They say medicines are adulterated to such an extent that if they write a prescription which provides for a certain proportion or combination of drugs, because one of the drugs contains more or less of the substance which they seek to incorporate into the prescription than it should contain their prescription may have exactly the opposite effect from that which it was intended to have."

"I desire to say that I have within a day or two asked for a report from the Chemical Bureau of the Agricultural Department upon a number of patent medicines and various nostrums that are imported into the country, some of them from abroad, and some of them manufactured in one State in violation of the laws of that State and sent into another State for disposal. Out of fourteen samples analyzed yesterday thirteen were absolutely rank frauds, deleterious in their effects, containing nothing that could or would under any circumstances accomplish the cure of any disease."

"Ninety per cent. of those patent medicines are absolutely bogus and ineffective, so far as the purpose which they assume to serve is concerned; more than 50 per cent of them are deleterious to health and contain substances that no intelligent physician would allow to be taken into the human system, and the larger part of them are absolutely poisonous."

"Mr. President, that is the only controversy in regard to the drug trade, and there has been a strong effort directed against this provision by these patent-medicine men. If they are going to make the Pharmacopœia the standard so far as the drugs and the medicines that are mentioned

in it are concerned, then let us make provision for the determination of the safety and healthfulness of the drugs and the medicines that are not mentioned in it."

"Our mails should be closed against the transmission of these nostrums, which are advertised and which tempt the sick to experiment with them."

"There should be an amendment in the post-office appropriation bill, now pending before this body, that would require every medicine and every package of merchandise that passes through the mails to be stamped in plain letters as to its name, its contents, and the purpose for which it is intended. No package of patent medicine, no package of patent food, or no package under any pretense should pass through the mails of the United States without a fair exposition of the purpose and character of it. Then the department that has charge of the inspection of these things could, upon a mere glance, determine whether it was a proper matter."

"The question is one that affects the people in their daily home life. It affects their health, their happiness, and the safety of their lives. Without health the general principles of government count for but little. There is no enemy so dangerous as the one which attacks the health of the people or threatens their life through subtle means of deception and fraud in articles of daily food or daily necessities of life." Etc., etc.

"It might be suggested that physicians could confine themselves as much as possible to write prescriptions composed of well-known drugs."

The purpose of this communication is to call the attention of the medical profession of the State of Michigan to the efforts of the National Auxiliary Congressional and Legislative Committee of the American Medical Association in connection with the Pure Food and Drug Bill and to most earnestly ask the profession not to divide its strength. A very powerful opposition must be overcome. In all probability during the next session of Congress a strong appeal will be made to the medical profession to stand firmly together in an effort to accomplish a result which will surpass in its importance and far-reaching consequences almost everything which has ever been before the profession and before the public.

EMIL AMBERG,

Michigan Member National Legislative Council,
A. M. A.

Detroit, Mich., July 11, 1904.

Book Notices.

Under the charge of
RAY CONNOR.

MEDICAL DIAGNOSIS. SPECIAL DIAGNOSIS OF INTERNAL MEDICINE. A HANDBOOK FOR PHYSICIANS AND STUDENTS. By Dr. Wilhelm von Leube of Wurzburg. Translated by Julius L. Salinger, M.D. With five colored plates and seventy-four illustrations. Cloth \$5.00; Half Leather \$5.50. D. Appleton & Co., New York, 1904.

The general interest in physical diagnosis is indicated by the number of works which have recently appeared on that subject. The one before us is based on the author's sixth German edition and is a substantial addition to the English literature on the subject. The fact that it has run through so many editions in the German in the past dozen years is a solid proof of the regard in which it is held even in its own country.

General diagnosis is not considered and the author proceeds, after a brief introduction, to his task of special diagnosis. A general sketch is given of the routine of the examination of the patient at the bedside and a strong plea made for a thorough examination in every case. A working knowledge, both theoretical and practical, of the ordinary methods of examination is presumed on the part of the student. The book aims to aid in the interpretation of the data so collected in arriving at a rational diagnosis. As the author points out when the diagnosis is between two diseases, either one possible, the safe course is to consider the most common disease as the probable one. In this way many a "Fehldiagnose" may be avoided. The great advantage of definitely committing one's self to a diagnosis before the autopsy is pointed out. Unless this is done in writing, it is only too easy to persuade one's self that while he may have been wrong in a minor detail or two, still he was right in the main and so an invaluable opportunity to learn slipped by unused.

The diagnosis of diseases of the heart is considered first and treated in a brief and comprehensive manner. The difficulty of making a diagnosis in many cases of acute endocarditis is frankly recognized and the physical signs are given as they may occur. The relative ease of making a diagnosis in the majority of chronic cases is pointed out. The diagnosis of the affections of the respiratory organs is then taken up and treated at rather more length. The various subjects are considered very systematically, and while the book is large, the subject matter has been as much condensed as possible and the relation of the signs to the pathological anatomy well shown as far as known. The various abdominal organs have been considered, each in

turn, including the digestive tract from mouth to anus.

Commensurate with the interest and importance of the subject, nearly one-third of the entire volume is given up to the diagnosis of diseases of the nervous system. The subject is covered very completely indeed, and is one of the most valuable portions of the work for reference. Much of the text here as throughout the book is in small type, rather too much indeed, as it is trying to the eyes and increases the difficulty of the reader, although it serves to keep the size of the book within bounds.

Under diseases of the muscles is considered the diagnosis of diseases of the blood and of metabolism. No technique is described for blood examination, but the section is preceded by a brief anatomico-physiological introduction and the chief blood diseases are then described and pictured. Under diseases of metabolism, diabetes mellitus is considered, although in another place the relationship of diseases of the pancreas to diabetes is noted. Diabetes insipidus and gout are also considered, together with other things under this head.

A consideration of the diagnosis of infectious diseases closes the book. For the sake of completeness, the translator has added brief articles on some of the rarer infections as "Yellow Fever," "Dengue," "Malta Fever," "Bubonic Plague," etc. The additions of the translator through the book, although minor ones, yet add their little to the value of the whole.

One is much impressed with the care and thoroughness as well as the wide learning with which the entire book is written. While the illustrations are by no means as profuse as in some of the American text-books, nevertheless the work will be found to be a store house of valuable information which is made very accessible by an excellent index. The mechanical features are well done and the book deserves to meet with the success which has been accorded it abroad.

TEXT-BOOK OF DISEASES OF THE EYE, FOR STUDENTS AND PRACTITIONERS OF MEDICINE. By Howard F. Hansell, A.M., M.D., and William M. Sweet, M.D., with Chapters by Christian R. Holmes, M.D., Casey A. Wood, M.D., and Wendell Reber, M.D. 532 pages. 253 illustrations. Cloth \$4.00 net. P. Blakiston's Son & Co., Philadelphia.

The number of works on ophthalmology has been so great in the past that one hardly sees the necessity for new text-books on the eye. The subject, however, is so difficult, of easy and com-

plete presentation that the ideal can hardly be said to be reached yet, and one can readily pardon the effort to make this subject less of a terra incognita to the student.

The work before us has been written for the student of ophthalmology whether graduate or otherwise. The aim has been to dwell chiefly on the practical side and to pass over more briefly the purely scientific and theoretical considerations. With this object in view they have condensed the section on refraction and said less than usual about those affections of the posterior segment of the ball which have not proved themselves amenable to treatment.

After a consideration of the examination of the patient and the general optical principles and refraction, the external diseases are taken up very fully. One chapter is devoted to diseases of the lids. Dr. Christian R. Holmes discusses the diseases of the lacrimal apparatus, orbit and cavities accessory to the orbit. The conjunctiva, sclera, cornea and uveal tract are then taken up in order and considered concisely. Under the chapter on the crystalline lens the various operations for cataract are given and the extraction of the lens in its capsule is mentioned, but no reference is made to the remarkable results the English surgeons have obtained recently in India with this method.

Glaucoma has a chapter to itself and injuries to the globe another. The diseases of the optic nerve and the anomalies of the external eye muscles have each separate chapters. Dr. Wendell Reber has contributed an excellent chapter on the pupil in health and disease, and Dr. Casey Wood one on ocular symptoms in general disease.

The work is based largely on the clinical experience of the authors and the material to be found in large and well known text-books. Any one looking for complete historical articles with full references to the literature, can find little here for their wants. The book is of value to a much wider circle than pure ophthalmologists as the clinical side is so strongly dwelt upon and the general practitioner must of necessity see many of these cases at least first. The method of describing the operations is very excellent as the several steps are often pictured in a very clear way. Thus any one glancing at Fig. 181 can see, without reading a word of text, that the authors are in the habit of using the right hand to make the corneal sections on the left eyes of their cataract patients.

The text is well written, clear, definite and concise, and the illustrations are for the most part excellent, those of clinical cases being especially good. The index is quite complete and adds to the value of the work. The mechanical features are good as a rule, although no effort has been made to reproduce the fundus in color.

CLINICAL TREATISES ON THE PATHOLOGY AND THERAPY OF DISORDERS OF METABOLISM AND NUTRITION. By Prof. Dr. Carl von Noorden. Translated under the direction of Boardman Reed, M.D. Part I. Obesity. The Indications for Reduction Cures. Small 8vo., 60 pages. Cloth 50c. E. B. Treat & Co., New York, 1904.

The name of the author is sufficient to gain one's attention for this little treatise and its perusal is far from disappointing. It is the first of a series to appear simultaneously in Berlin and New York on the general subject of Metabolism and Nutrition. Obesity is first considered in otherwise healthy subjects and then as complicated by various other diseases which have to be considered in determining whether or not a reduction cure ought to be attempted. The work while eminently scientific is at the same time practical and full of suggestive thought.

The false conceptions which have grown up around obesity, as well as the dangers which in many cases accompany the attempts at reduction cures, are well set forth, as also are the scientific principles which should govern one in the treatment of individual cases. The technique of reduction cures is not gone into, as this subject has been reserved for a subsequent publication.

The style is clear and the book nicely gotten up. It is well worth reading and a place on our shelves.

THE SELF-CURE OF CONSUMPTION WITHOUT MEDICINE. by Charles H. Stanley Davis, M.D., Ph. D.; pp. 176. Cloth 75c net. E. B. Treat & Co., New York City, 1904.

The title of this book is a little deceptive. The author does not claim that a medical man is unnecessary for the self-cure. In fact there is no disease where the advice of the wise physician can do more for his patient. It appeals, however, to the laity as well as the profession, and contains many practical and helpful facts as to the treatment of this great plague.

The use of drugs is considered in some detail and the fact pointed out that no specific has as yet been discovered, despite the claims of many, both within the profession and without. In combating the symptoms, drugs have their place and must often be used, but too frequently the advantage gained is more than offset by the deranged digestive system. The other methods of treatment are then taken up, such as open-air, proper breathing, diet, exercise, climate, etc.

The book is simply written, and while giving certain disputed points as proven, such as the transmission of animal tuberculosis to man, is in the main sound. A chapter is given on the Prevention of Consumption and other Diseases. The index is incomplete and adds little to the usefulness of the work.

Progress of Medical Science.

MEDICINE.

Under the charge of

HARRISON D. JENKS.

Meralgia Paresthetica.—This name was given by Roth to a peculiar syndrome appearing most commonly, though not exclusively, in the distribution of the external cutaneous femoral nerve. Musser and Sailer describe this condition as a "disturbance of sensation on the external surface of the thigh, characterized by various forms of paresthesia, associated with dissociation and more or less diminution of sensation. Another definition would be to call it an alteration of sensation on the outer aspect of the thigh characterized by pain, dissociation, anesthesia, and paresthesia.

Etiology.—This is obscure. There are three factors that appear to bear a close relation to the production of this disease; these are infections, traumatisms and intoxications.

Pathology.—This is a mooted question. Some authors place this disease among the neuralgias, others among the neuritides and still others claim that it should not be classed with either of these. Spiller believes many of the cases are allied to the pressure palsies. Musser and Sailer are of the opinion that it is probably a neurosis.

Treatment.—Strychnine sulphate grain 1/50, increased to 1/30, is given three times a day. The limb is massaged for 15 minutes each day, followed by wrapping the whole thigh in hot Turkish towels for 1/2 hour. At the end of a week a mild galvanic current (anode on the thigh, cathode on lumbar spine) is added to the above treatment. Counterirritation seems to be harmful. Above all rest for the limb is essential. Various other methods of treatment have been tried, as the dry faradic brush, the use of salicylic acid and resection of the nerve in obstinate cases.—(*The American Journal of the Medical Sciences*, July, 1904, J. E. DONLEY).

The Feeding and Care of Children.—Systematic examinations of all children under our charge should be undertaken at regular intervals, and should include the level of the shoulders and hips, the spine, eyes, ears and throat.

During the second year a child should be fed five times a day; the diet at the beginning should include only milk, gruel, and orange juice, to which later may be added an egg, soup, bread

and butter, and at the end of the year meat. Beef juice should be used only as a tonic.

During the third year but three meals should be given, with an extra bottle of milk at 10 a. m., the articles of food being continued with the addition of certain vegetables and simple desserts.

After the third year but three meals a day should be given, including the same articles of food and throughout childhood about one quart of milk should be taken daily and the evening meal should consist only of cereal and milk and bread and butter. Both the variety and the amount of food must be carefully restricted.

Children during the second year should sleep twelve hours at night and have a morning and afternoon nap each day, and throughout childhood should continue to sleep twelve hours at night with one nap during the day.

Provision for the exercise of children should be carefully planned—at first by the use of the nursery fence and baby jumper and later by systematic walks for short distances at a time, and later still by bicycling, horseback riding and tramps in the country.

Throughout childhood they should be kept as much as possible out of close and crowded rooms. When in the house the room should receive ventilation from out of doors and they should be kept in the absolute open air several hours each day.—(*Archives of Pediatrics*, June, 1904, R. G. FREEMAN).

Paralysis Agitans.—Its etiology is obscure. Syphilis plays an apparently unimportant part. The treatment is unsatisfactory. No cures were obtained out of 219 cases treated. An attempt was made to remove all source of anxiety. The patient was placed on a simple diet and an effort was made to improve the general nutrition of the case. The greatest improvement was obtained by the use of massage, passive movements and hydrotherapy. The use of hydrobromate of hyoscine and sulphate of duboisine diminished for a time at least the tremor and relieved the insomnia.—(*Journal of Nervous and Mental Diseases*, March, 1904, HART).

SURGERY.

Under the charge of

MAX BALLIN.

The Operative Treatment of the Hypertrophied Prostate.—The writer gives a most excellent review of the evolution of the operative treatment of prostatic hypertrophy, its present status and the choice of operative methods. He comes to the following conclusions:

1. We do not have a free choice of the method of the operation we are to do, in all cases, but are more or less compelled to select this method or that according to the conditions presented in the individual cases.

2. The most important single factor in determining whether a radical operation should or should not be performed is the condition of the renal activity. Beside this, one has to consider the general strength or feebleness of the patient, and his comfort or suffering.

3. The mortality of radical operations, were they applied early, would be trifling. The dangers arising from such operations are not nearly as great as those entailed by the use of the catheter.

4. Where there is nothing to prevent a free choice of method, the following holds true:

(a) The total removal of the gland by the best of the perineal technique is the operation of choice.

(b) When any condition is present which makes the perineal operation too difficult of performance, or where there is a contraindication of any sort to its application, the suprapubic operation is the operation of choice, and when contraindications are present which make this operation undesirable, the Bottini becomes the operation of choice. Finally, when the patient's condition is such as to make any of the above three methods inappropriate, and we are obliged to do something, we should do a palliative operation for drainage.

5. Cystoscopic examination should, when it can be readily done, precede operations of all sorts in which there is any doubt as to the exact nature of the hypertrophies. It is essential to the proper performance of the Bottini. Its utility with regard to the other operations is that of learning whether or not there is a present a middle lobe of such size and in such a position as to make the perineal operation especially difficult of performance.—(*Annals of Surgery*, June, 1904. F. S. WATSON).

Transplantation of Sartorius Muscle into a Defect in the Abdominal Wall.—Czish

used the Sartorius Muscle for implantation into a muscular defect of the abdominal wall. The case was one of a large abdominal hernia, caused by sloughing of abdominal muscles and fascia, after a laparotomy. The muscle was cut 12 inches below the anterior-superior spine of the iliac-bone and freed up to within a distance of two inches from the spine. If cut this way the muscle is left connected with its nerves. The function of the leg was not noticeably affected by the operation; only a slight cutaneous anesthesia appeared in the territory provided by the nervus cutaneous femoris medius. This nerve perforates the Sartorius Muscle and therefore was injured in dissecting the muscle.

The result of the closing of the abdominal hernia was perfect and continued to be so during a year's observation.—(*Muenchener Medizinische Wochenschrift*, No. 19, 1904, J. F. CZISH).

Permanent Results of Operations for Malignant Tumors.—Kroenlein reports some very interesting results of operations for malignant growths. These results will prove valuable to those physicians who still doubt the benefit of surgical interference in cancers.

1. The first case is one of conservative myomectomy (enucleation of fibroids from the uterus). Operation was performed 15 years ago. The cure is complete.

2. The second is a case of nephrectomy for cancer of the kidney. Operation was performed 18 years 7 months ago, with no return of the cancer.

3. Another was a case of nephrectomy for cancer of the kidney. Four years 5 months have elapsed since operation. There is no return of the growth.

4. Nephrectomy was performed for a large polycystic tumor of the kidney. Five and a quarter years have elapsed since operation with no return of the trouble.

5. A primary cancer of the ulna (pavement cells—carcinoma) was operated on 6¾ years ago. The patient is to-day perfectly well.

6. The last case is one of excision of relapsed cancer of the larynx. Fourteen years have passed since operation with no return of the cancer.—(*Beiträge zur klinischen Chirurgie*. Vol. XLI, Part 1.

GYNECOLOGY AND OBSTETRICS.

Under the charge of

B. R. SCHENCK.

Occipito-iliac Posterior Position.—Nature oftens needs but the slightest aid to correct occipito-iliac posterior positions. Voorhees discusses the management and treatment of these cases, advocating the keeping of the patient upon her feet, with short walks, out of doors, just before labor and about the room, during the first stage. Small doses of quinine and strychnine should be given for one or two weeks before confinement and during the first stage, as these drugs will greatly strengthen the labor pains.

In 90 per cent of the cases, spontaneous rotation will occur, but for this to take place certain conditions are necessary; the head must not be too large for the pelvis, the flexion must be adequate, the pelvic floor must be resistant and the pains must be strong. Weak pains constitute the most frequent cause for interference.

In case rotation does not occur and the head is high and movable and the pelvic measurements normal, as complete a dilatation of the cervix as possible, should be secured, after which the hand is introduced and the rotation produced by manipulation. This can usually be accomplished if the lower uterine segment is not contracted around the child. Deep anæsthesia is necessary.

When the rotation has been brought about, the forceps are applied to the sides of the head, an assistant meanwhile asserting strong pressure on the fundus.

If, after moderate traction, the head does not descend or if the pelvis is contracted, version should be done.

When the head is engaged in the superior strait or lies in the mid-pelvis, rotation may sometimes be produced by pushing upward on the forehead, the result of which is to increase the flexion and allow the occiput to come down low enough to meet the resistance of the perineum and so start rotation.—(*Medical News*, June 4, 1904.)

Bathing During Menstruation.—In a paper read at the recent meeting of the American Gynecological Association, Edgar discussed the subject of bathing during the menstrual period. This subject has been little discussed in the literature. Edgar's conclusions were as follows:

1. All forms of bathing during the period are largely a matter of habit and can usually be acquired by cautious and gentle progression; but not for every woman does this hold good, and surf bathing, where the body surface remains chilled for some time, should always be excepted.

2. A daily tepid sponge bath (85° to 92° F.) during the menstrual period is not only a harm-

less proceeding, but is demanded by the rules of hygiene.

3. In the majority of, if not all women, tepid sponge bathing after the establishment of the flow, namely, on the second or third day, is a perfectly safe practice.

4. Furthermore, in most women the habit of using the tepid shower or tub bath after the first day or two of the flow, can with safety be acquired.—(*Abstract. American Medicine*, June 25, 1904).

When to Operate for Myoma Uteri.—

When should a patient who has an uterine fibroid be referred by the practitioner to the specialist for operation? Pfannenstiel answers this question by summing up the indications for operation as follows:

1. Size. When a tumor reaches the size of an adult head in older patients, there should be no question of the propriety of an operation. When the tumor is nodular and growing it should be removed long before reaching this size.

2. Pain. Tumors producing pain should always be removed.

3. Hemorrhage. Those accompanied with bleeding should be removed.

4. Dysuria. Those which develop in such a manner as to press on the bladder or urethra should be operated upon.

5. A sub-serous tumor having a long pedicle which is liable to become twisted, should be removed.

6. Rapid growth. On account of the possibility of sarcoma or sarcomatous degeneration, all rapidly growing tumors should be early removed.

7. Tumors complicated by other grave symptoms, in so far as caused by the tumor, should be removed.

The week just previous to the menstrual period is the most favorable time for the operation. Different methods of operative procedure are fully discussed by the author.—(*Deut. Med. Wochenschrift*, March 31, 1904).

Local Anaesthesia with Cocaine and Adrenalin.—

Foisy counteracts the vaso-dilator effects of cocaine, when used for local anæsthesia, by mixing with the cocaine, adrenalin. He employs a 1 to 200 solution of cocaine and a 1 to 1000 solution of adrenalin. From 6 to 12 drops of the latter are added to 4 to 10 cubic centimeters of the former and of this mixture the maximum dose is 15 cubic centimeters.

Absolute dryness of the wound follows the use of this, but care must be taken that all vessels are carefully ligated, as otherwise post-operative hemorrhage may occur.—(*Cent. für Gyn.*, May 21, 1904).

PHARMACOLOGY AND THERAPEUTICS.

Under the charge of

W. J. WILSON, JR.

Pertussis.—Hare states that every remedy is worthless as far as cure is concerned. Antipyrin given in doses of from 1 to 3 grains every five hours will nearly always decrease the number of the paroxysms, but not the severity of each attack. Solution of quinine 1 grain to 1 ounce of water, applied to the pharynx by means of a spray, is useful to allay symptoms as well as for a prophylactic measure. Tincture belladonna and nitrite of amyl have been employed with good results. Attacks may be modified by placing patient in a bronchitis tent or keeping the air of the living room moistened by steam.

Madison Taylor, of Philadelphia, recommends hot poultices over the posterior surface of the lungs. Relief is almost immediate. After an hour the poultice is removed and a stimulating preparation rubbed into the skin, after which a cotton jacket is applied. This method reduces the temperature, relieves congestion, and incidentally the pain, and secures rest.

From comparative studies in 752 cases, C. G. Kerley believes that antipyrin administered internally controls the paroxysms better than any other drug employed. Quinine if given in sufficiently large doses, had also a very good effect.

A number of remedies have been recommended for local application. Anders in two cases, cut short the disease by a hydrogen-peroxid gargle. In the catarrhal stage hydrogen-peroxid for rendering the naso-pharynx sterile and the administration of asafoetida or belladonna internally has been most efficient. Out of door life should be advised excepting on windy days. A spray of 1-40 carbolic solution may displace the peroxid of hydrogen solution if the latter cannot be tolerated. Since antitussin has produced such untoward effects as obstinate ulceration of the mucous membrane, it is not to be recommended.

Monti, of Norway, claims to have cut short the malady by a thorough disinfection of the room in which the patient lives by sulphurous acid. Everything with which the patient came in contact was fumigated for six hours. The room was well aired, the patient put to bed and covered with fresh linen. The following day the disease had disappeared.

Hlinske, of Bohemia, has had a large experience in the employment of formalin in the treatment of various catarrhs, and influenza, as well as whooping-cough. The only untoward symp-

toms noted with its use by placing the patient in a room with a lamp evaporating paraform tablets, were apparent paleness and loss of appetite and irritation of the eyes. He concludes that by the proper inhalation of formalin it is possible to destroy the germs of whooping-cough, and that thorough disinfection with formalin of the living rooms of the patient, succeeding inhalation, is sufficient treatment to frequently effect a cure.

The inhalation every two hours of a spray of a 1 per cent solution of salicylate of soda is recommended by Thompson.—(Critical Summary by LOUIS SPITZ, *Therapeutic Review*, May, 1904.)

Formaldehyde Poisoning.—An estimated quantity of 2 or 3 ounces of a 40 per cent solution of formaldehyde was swallowed by the patient. The symptoms were as follows:

When first seen, a few minutes after swallowing the formaldehyde, the patient was tossing about in bed evidently suffering intense pain. Questions were not answered. The diagnosis was made by the odor of the breath and the history. Lachrymation was profuse, respiration noisy and labored, rate 30, with loud mucous râles from the greatly increased secretions in the nose, throat, and mouth. The pulse at first was strong, rate 112, but gradually weakened and became imperceptible. Cyanosis was marked. Unconsciousness soon intervened, lasting about ten minutes, from which the patient partially recovered. Deep cyanosis and widely dilated pupils preceded death. The patient lived about twenty minutes after first being seen. The examination thirty hours after death showed blood still fluid, dark brownish red in color. The stomach contained several hundred cubic centimeters of fluid, having a strong odor of formaldehyde. The mucosa of the lower part of the œsophagus, stomach, and first portion of the duodenum was dark chocolate brown in color, and of the consistency of leather. All organs and tissues in contact with the stomach were hardened in a similar manner to a depth of about one-third of an inch. The bronchi contained an excessive amount of mucous. The rational treatment is administration of a dilute ammonia solution followed by thorough washing of the stomach through a stomach tube.—(LEVISON, *Jour. A. M.*, June 4, 1904).

DERMATOLOGY AND SYPHILIS.

Under the charge of

A. P. BIDDLE.

The Dangers of Allowing Warts and Moles to Remain Lest They Become Malignant.—To emphasize the danger of *not* removing warts and moles, and sometimes nevi, lest they should become malignant, Dr. Keen calls attention to 25 cases of such malignant degeneration and urges removal before a malignant change occurs. Many moles and warts are congenital; others arise later in life, either in childhood or adult life, and still others frequently appear in elderly people. (The ordinary, usually transitory warts of childhood are not considered.) All such growths are exposed to traumatism, such as blows, friction of the clothing, scratching on account of the itching, etc. In consequence of such injury or repeated and long continued irritation, or even without any assignable cause, they begin to increase in size. This sudden activity and increase in size usually do not occur for months or more likely years; it may be thirty or fifty or even more years after the mole or wart was first noticed. The moment they begin to increase in size they are, Dr. Keen believes, almost invariably already malignant growths and should be treated as such.

Some pathologists are disposed to maintain that many, if not most, of these are epitheliomata rather than sarcomata; others regard them as true sarcomata. Those which arise from warts proper, Dr. Keen believes, are generally epithelial carcinomata. In a number of cases that he reports, however, especially those arising from moles, the microscopic examination showed that they were unquestionably sarcomata; not infrequently their sarcomatous nature was emphasized by a general sarcomatosis; a multiple recurrence not observed in the epithelial carcinomata.

Dr. Keen believes that the treatment frequently advised both by surgeons and dermatologists is not radical enough and emphasizes the need of total excision before malignancy begins, *i. e.*, during the quiescent and apparently harmless stage, prior to the last "sign of activity;" and deprecates the use of caustics, especially in the pigmented mole.

Few regions of the body are exempt. Many moles and warts exist on parts of the body covered by the clothing, where the unsightliness of a scar needs raise no objection.

In the discussion which followed, Dr. A. D. Bevan, Chicago, calls attention to the possibility of danger of rapid general involvement apparently from infection of the wound in the operation itself, especially so in the removal of the melanotic sarcoma. He considers every pigmented mole histologically a malignant growth and it takes

but a little stimulation to change a clinical benign into a clinical malignant growth. At the earliest possible indication of any irritation he believes a mole should be destroyed with the Paquelin cautery and then widely extirpated with the knife.—(W. W. KEEN, M. D., Philadelphia, *The Journal of the American Medical Association*, July 9, 1904.)

Reinfection of Syphilis.—If one could only find some means by which one could prove beyond doubt at any time that syphilis has been entirely eradicated from the organism of an individual heretofore infected with the same, the disease would at once be freed of its most offensive and oppressive feature. So far, the assurance that a patient was cured can be obtained only by the demonstration of a new infection, certainly a questionable advantage to him. Nevertheless, the proof of the actual occurrence of reinfection must be accepted as establishing the fact that syphilis can be entirely eliminated from the human organism.

Dr. Klotz then recites a case which he believes to be undoubtedly one of reinfection. Patient, male, born in 1847, German, furrier by trade, came first under his observation in 1882 for a large gummatous infiltration over middle portion of sternum, with several gummatous periosteal intumescences of right tibia, with no history, however, of primary or secondary symptoms. Early in December on both legs there appeared a number of small, slightly infiltrated, scaly patches. During November, 1883, tibia suddenly began to swell more rapidly, a circumscribed area became red, softened and broke down, with evacuation of a small piece of dead bone. Up to 1894 many other evidences of gummatous degeneration made their appearance, which were controlled by the regular mode of treatment.

Patient was not seen then for six years, when he appeared with a sore on the prepuce, following a blister which had developed about a week after exposure, the typical picture of a normal primary lesion of syphilis, with œdema of prepuce and subsequent enlargement of inguinal glands; followed by the usual train of cutaneous lesions and within six months with an attack of hemiplegia.

There is a wide difference of opinions on the question of the gravity of second infections of syphilis. Some authors, mostly those who report reinfections within a short interval after the first disease, report a very mild course as the usual one. Others observe a very severe attack.—(HERMANN G. KLOTZ, M. D., New York, *Journal of Cutaneous Diseases*, July, 1904.)